JAN 25 1935

The OIL AND GAS JOURNAL

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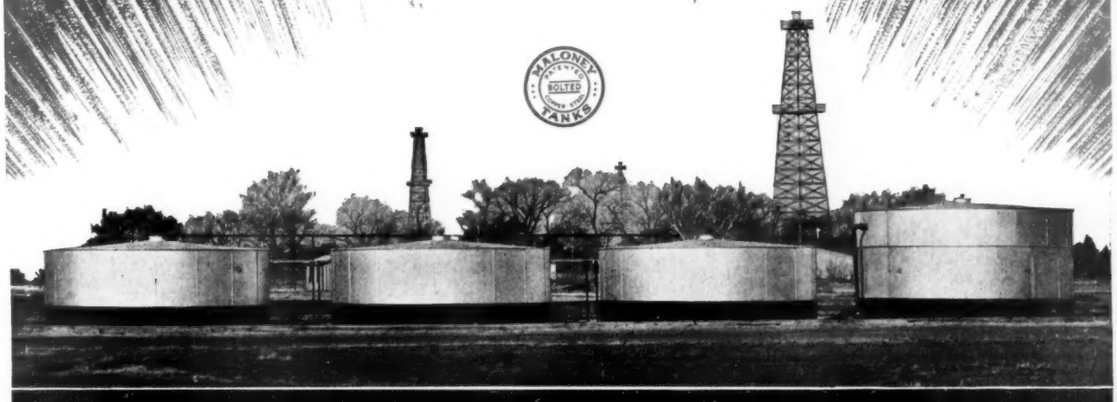

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For over twenty-two years Maloney standards have demanded superior quality and constant progress. The combination has kept Maloney Tanks always ahead!

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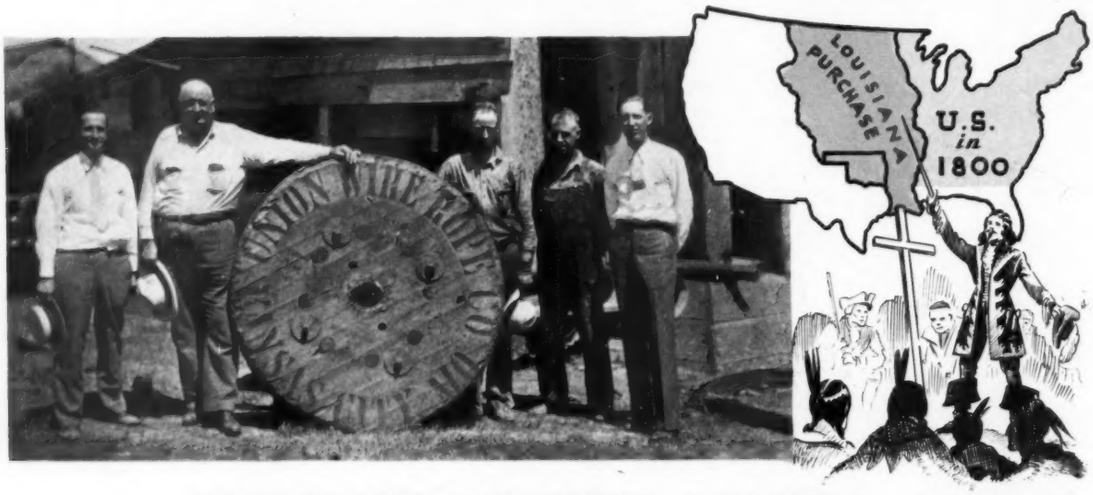

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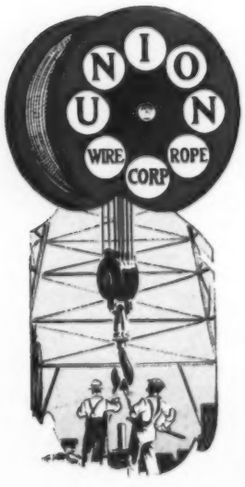

Oklahoma was just a small part of this nation's famous "Louisiana Purchase", of 1803. Yet, at a dollar a barrel, Oklahoma oil now pays the cost of that mammoth purchase *12 times a year!*

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The above photo was taken at Carter Oil Company's Well No. 7, Fairfax field. John W. Simpson, the contractor, has used many UNION Lines and regularly comes back for more. The men, left to right, are J. A. Undercofler, Union Wire Rope Corp.; John W. Simpson, Contractor; J. E. Vickery, Driller; Roger de Steiger, Tool Dresser; and Ernie Gillespie, Jarecki Mfg. Co.

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OIL MAN'S CALENDAR

February

5-6—Des Moines, Iowa, Iowa Petroleum Association, Hotel Fort Des Moines.

7-8—Huron, S. D., South Dakota Oil Men's Association, Marvin Hughitt Hotel.

7-8—Louisville, Ky., Kentucky Petroleum Marketers Association.

12-14—Columbus, Ohio, Ohio Petroleum Marketers Association, annual dinner. Deshler-Wallick Hotel.

18-21—New York, Petroleum Division, A.I.M.E. (A.I.M.E. annual meeting).

20-21—Peoria, Ill., Illinois Petroleum Marketers Association, Pere Marquette Hotel.

March

21-23—Wichita, Kans., American Association of Petroleum Geologists, annual meeting.

April

8-13—Houston, Tex., Oil Equipment and Engineering Exposition.

11-13—Dallas, Tex., Petroleum Industry Electrical Association, Baker Hotel.

22—New York American Chemical Society, semiannual meeting.

(?)—Wichita, Kans., Kansas Oil Men's Association.

May

1-3—Tulsa, Natural Gasoline Association of America, Tulsa Hotel.

6-9—Memphis, Tenn., Natural Gas Department, A. G. A., Peabody Hotel.

14-16—Tulsa, American Petroleum Institute, fifth mid-year meeting, Mayo Hotel.

June

20-21—State College, Pa., Pennsylvania Grade Crude Oil Association, annual meeting.

24-28—Detroit, Mich., American Society for Testing Materials, annual meeting, Book Cadillac Hotel.

November

11-14—Los Angeles, sixteenth annual meeting, A.P.I., Los Angeles Hotel.

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A few extra dollars for a BAKER CEMENT WHIRLER SHOE *WILL HELP PROTECT YOUR INVESTMENT!*

WHEN you've spent months of effort and a mint of money drilling a deep well, invest a few more dollars in a Baker Cement Whirler Shoe to assure a safe landing and the best cement job.

The side openings slant upward and are baffled to direct the slurry in a spiral around the pipe, whether the casing is hanging free or is set on bottom.

IN addition to the regular bottom circulation hole the Baker Cement Whirler Shoe has a number of side ports leading out of the valve chamber below the valve seat. These outlets, "baffled" by plates set in grooves cut in the wall of the shoe, direct the slurry upward and whirl it about the casing.

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The Baker Cement Whirler Shoe is a Guide and Float Shoe as well as a Cement Shoe. Only Baker-Formula Concrete and Bakelite are used in the construction of the plug and valve mechanism. Thus, it has the same efficient, double seal buoyant ball valve, ample strength and complete drillability that distinguish Baker Cement Equipment from all others, everywhere.

All Baker Cement Equipment is described in detail in the new 1935 Composite Catalog.

Cross section of Baker Cement Whirler Shoe showing side outlets and double seal valve mechanism.

Strength—
Valve Efficiency—
Drillability—

You will always find a *balanced* combination of these three essentials for guiding, floating and cementing casing in all Baker Cement Equipment.

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Increased Allowables and Better Gasoline Prices Clearly Indicate Improvement in Conditions

By ANDREW M. ROWLEY

ANOTHER increase in the Federal crude oil production allowable, this time amounting to 65,800 barrels daily more during February than in January, coupled with increases in gasoline prices announced in a number of areas throughout the country were regarded during the past week as the best indications of the improved situation in the petroleum industry. The better feeling in the refined oil market was the more important factor as it has been conceded generally the crude oil situation is in especially good shape and would display greater strength with any stiffening of gasoline prices.

These developments—higher allowables and better gasoline prices—also showed that the Federal government and the industry are convinced there is no great danger of a let-down in efforts to control East Texas. They reflected the feeling of optimism which seems to be spreading through the East and where it is said the prospect of maintaining gasoline prices at "break-even" or profitable levels is better now than at any other time during the past four or five years. This feeling is especially important to the crude oil producer as it has been indicated if gasoline prices did not strengthen and bring adequate returns, large refiners would not feel inclined to maintain the crude oil price structure at prevailing levels.

Field developments of the past week merely emphasized the fact that even the substantial increase in drilling operations registered during the past year and still continuing is not resulting in any discoveries likely to change the situation. The Fitts Pool in Oklahoma, the most important discovery since the opening of Conroe in 1932, is the most prolific new area in the country but its allowed production for the last half of this month is only 9,000 barrels daily. There are 34 wells in this pool now with the probability there will be 10 more producers by the end of the month. New "largest well" records are being made in this pool every day or so. Last Saturday the Carter Oil Company completed a well which flowed 1,043 barrels the first 55 minutes, a record for the pool to that time, but the next day the same company brought in another well which flowed 1,065 barrels during the first 55 minutes.

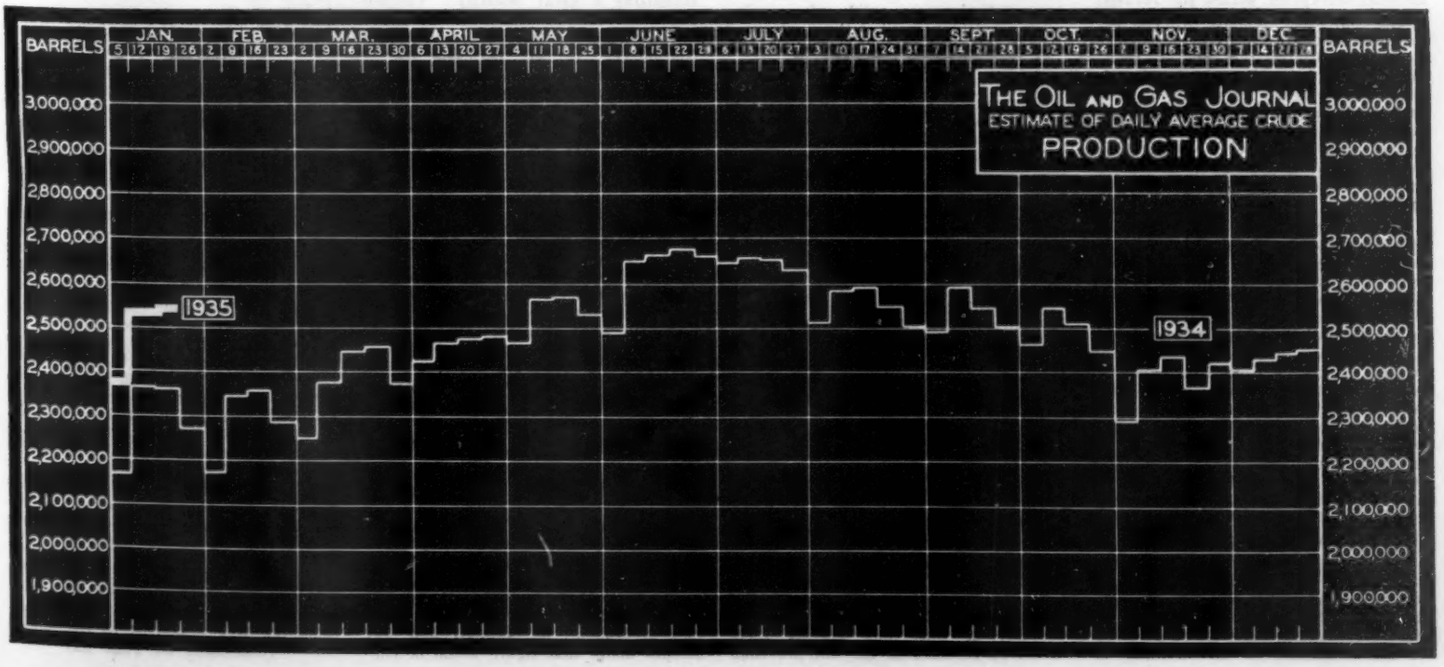
The situation in the Texas Gulf Coast area may be visualized when a well extending production of the Manvel Field one-quarter of a mile and making 18 barrels an hour features the week's news. Kansas continues in the limelight. The state established a new high production record during the past week with an average daily output of 143,200 bbls. Two Siliceous lime discoveries, 25 miles apart, were made in Barton County.

Crude Oil Production in the United States

Estimated daily average production for the week ending January 19, a comparison with previous week and the Federal allowables follow:

	Jan. 19	Federal allowable January	Jan. 12
Oklahoma—			
Oklahoma City	166,120	.....	188,225
Seminole-St. Louis	95,250	.....	89,400
Remainder of State	236,925	.....	235,550
Total Oklahoma	498,295	489,300	513,175
East Texas—			
Lathrop	156,336	.....	153,544
Kilgore	148,518	.....	146,718
Joiner	135,453	.....	132,678
Total East Texas	440,307	.....	432,940
West Texas	149,247	.....	148,918
North Central Texas	88,494	.....	90,165
Texas Panhandle	60,957	.....	57,404
East Central Texas	51,660	.....	52,028
Gulf Coast—Texas	173,803	.....	173,786
Southwest Texas	57,272	.....	56,991
Total State of Texas	1,021,740	1,006,800	1,012,227
Kansas	143,200	137,100	137,750
North Louisiana	23,490	.....	23,855
Gulf Coast—Louisiana	86,703	.....	84,500
Total Louisiana	110,193	99,700	108,355
Arkansas	31,930	31,000	30,935
Eastern Fields (except Michigan)	105,900	96,100	104,000
Michigan	31,089	28,100	31,154
Rocky Mountain area	97,230	98,300	96,660
California—			
Santa Fe Springs	39,250	.....	40,900
Long Beach	64,500	.....	66,000
Mountain View	14,750	.....	15,750
Elwood	9,500	.....	9,750
Kettleman Hills	64,900	.....	58,500
Remainder of State	319,100	.....	316,900
Total California	512,000	473,900	507,800
Total United States	2,550,677	2,460,300	2,542,056

Increase 8,621 Bbls. Daily.



Senate Passes Section; Pettengill Is Doubtful of Its Constitutionality

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Jan. 22.—The Senate today passed the Connally bill re-establishing authority in the federal Government to control interstate shipments of oil. No roll call vote was taken, the bill being passed with an overwhelming majority by viva voce vote.

Only minor amendments were made, giving to the attorney general authority to apply to the appropriate federal court for enforcement of provisions of the act, and ordering the attorney general to bring whatever actions might be necessary for its enforcement. As previously worded this authority was delegated to the duly authorized agent or agency set up to administer the bill.

The only opposition was voiced by Senator Borah.

Pettengill's Doubt

Doubts as to the constitutionality of such a measure have been raised by Representative Samuel Pettengill, a member of the Oil Investigating Committee. Meanwhile, from all reports, Texas is still sitting on the lid, contrary to the administration's expectations. While these bills are being considered by the Congress, the National Industrial Recovery Board is deciding what legislative recommendations should be made for the continuance of the Recovery Act.

Reports reaching here indicate that the Texas authorities are controlling the situation in that state in remarkable fashion, contrary to the views held by some mmebers of the administration who predicted a wild scramble to produce as much oil as possible, with the resultant national disruption within the industry.

The contention of state officials that they had adequate laws and enforcement measures to control the situation within the state is being borne out. Results are being watched carefully by members of Congress who are desirous of learning whether there is necessity for federal laws to bulwark the laws of the states, or if legislation giving the Government control of the industry is necessary.

If the states continue to hold up their end, prospects are bright that the industry will escape this session of Congress without the enactment of any federal control laws. With Texas in the saddle in the House of Representatives, due to the position which Representative Rayburn holds on the Interstate and Foreign Commerce Committee, and the reins on oil legislation apparently being handled by the Cole committee, a majority of whom are reported to be against any federal regulation, it is believed that any legislation proposed will be defeated, unless it is clearly shown the industry absolutely needs it to survive.

Cole Committee Reappointed

The Cole committee was reappointed today by the Committee on Interstate and Foreign Commerce. It will serve for the duration of this term of Congress and will decide what action shall be taken by the full committee on all oil bills. A meeting will be called in a few days to determine recommendations on the enactment in the House of legislation similar to the Connally bill in the Senate.

Connally Bill Revised

Senator Tom Connally of Texas, in collaboration with Senator Gore of Oklahoma, has submitted the draft of the bill designed to replace Section 9 (c) of the Recovery Act. The transportation in interstate and foreign commerce of hot oil is flatly prohibited by the terms of the bill, with authority delegated to the President, or his duly authorized agent, to enforce the provisions thereof.

For a second violation of the terms of the proposed law Senator Gore's provision that a prison sentence be mandatory was included, the penalty under the law being set at a fine not to exceed $5,000 and/or imprisonment for not to exceed six months, each act or omission in violation of the act being considered a separate offense.

The declaration of policy contained in the bill states that it is the policy of Congress to protect interstate and foreign commerce from the diversion and obstruction of, and the burden and harmful effect upon such commerce caused by contraband oil, to co-operate with the several states, or any of them in their efforts to conserve deposits of crude oil situated within their respective limits and on the public domain. For the purpose of this bill contraband oil shall be construed to be crude petroleum and the liquid products and derivatives and blends of crude petroleum, any part of which has been produced, refined, processed, transported, withdrawn from storage, or otherwise handled in violation of any state law, or valid orders, rules, or regulations prescribed thereunder, and the liquid products of such crude petroleum or petroleum products, derivatives, or blends.

The words "engaged in interstate or foreign commerce" shall, for the purposes of this act, include shipping, receiving for transportation, transporting, receiving, selling, purchasing, or offering, or causing to be shipped, received for transportation, transported, received, sold, or purchased in, or in the course of interstate or foreign commerce.

Bill in House

Representative Disney of Oklahoma has introduced a bill of a similar nature in the House of Representatives which has been referred to the Committee on Interstate and Foreign Commerce.

The majority of the Committee is apparently in favor of such a law and it is expected that the bill will be reported out favorably by the Committee in the near future.

Predictions had been freely made by various Senators and oil men that a permanent substitute for Section 9 (c) would be enacted by the Senate within the week, due to the fact that all controversial points have been eliminated from the act. The most controversial question considered by either Senators Connally or Gore was whether there should be included in the bill provision making violation of a federal production control law an offense under the terms of this bill. It was finally decided that this matter should be left out because it would probably delay passage of the bill and perhaps kill it altogether.

Pettengill's Criticism

Representative Pettengill of Indiana, a member of the Cole Investigating Committee, has given much thought to the legality of federal control or supervision of the oil industry. He has prepared a statement on the subject of Congressional action to prohibit the shipment in interstate commerce of hot oil which he had inserted in the Congressional Record.

It is his contention that such control by the Federal Government, having as its base state laws which fix the amount of oil that can legally be shipped out of the state, would be unconstitutional. Such a law would give the states regulatory powers over interstate commerce which the Federal Constitution specifically reserves to the Federal Government.

Mr. Pettengill's statement says: "Before embarking on another effort to corral hot oil it may be worth while for Congress and the petroleum industry generally to examine a little more critically the assumption upon which the proposed legislation rests.

"Let it be understood that we are here dealing with constitutional power, rather than the question of the desirability of conserving our indispensable natural and national resources, or of stabilizing a great industry. The Supreme Court will still continue as an ex post facto partner in petroleum legislation.

"I therefore raise this question: Does Congress have the power to forbid the facilities of interstate commerce to petroleum, or other commodities produced in excess of the law of the state of its production?

"The question is: Does legislation of this general character amount to a regulation of interstate commerce by the State and not by the National Government? If so, is it valid? Can Congress delegate its exclusive power to regulate interstate commerce to a state?"

These questions were answered by Mr. Pettengill when he pointed out that the amount of oil to be produced by any state is set by the state agency not acting in the national interest or from a national viewpoint. It acts in its own interest to conserve its natural resources, to raise the price of crude and to benefit its own citizens, Mr. Pettengill stated.

Constitutional Question

The effect would be, it is claimed in the statement, that Congress ratifies in advance whatever action is taken by the state authorities over which the Congress would have no discretion. The states could set whatever amount they thought should be shipped and any amount above that figure would be contraband oil and its shipment illegal. Under the terms of such a bill, Mr. Pettengill claims that the state could conceivably rule that no oil whatsoever shall be produced during a certain period, and if any was produced, it had been declared contraband oil in advance by Congress.

Mr. Pettengill states: "These are questions of far-reaching importance. They go much farther than the immediate situation. They go also, it seems to me, to the matter of the much discussed 'state compacts.' If one state cannot regulate the amount of oil that flows in interstate commerce, can a group of states by compact regulate that amount? Can Congress consent to such regulation even before it is made or known?

"Could one, or a group of oil-producing states, in some future time when oil runs short, limit its or their production to an amount sufficient only for their own citizens? It is easy to say that in such case Congress would repeal it 'interdiction' so that oil might flow to the other states. But in any event, we are dealing here with a supposed power of a state—with the aid of Congress—not only to conserve its petroleum but also to raise the price of petroleum and thus levy tribute upon the oil consumers of the Nation."

His statement continues: "However ingenious we may be in our efforts to permit the states in effect, if not in law, to regulate interstate commerce in petroleum, we may yet find it necessary to amend the Constitution of the United States before that is done. We still have a Supreme Court, as we were reminded the other day."

The statement is concluded with a digest of some of the legal authorities on which Mr. Pettengill bases his contention as to the illegality of such form of control and ends with the following paragraph:

"This paper will justify the labor of its preparation if it recalls once more the wisdom of its fathers in making commerce among the states free from state control and the ever-present danger of whittling that wisdom away. We may, and do, freely grant the desirability of conserving a great natural resource, while we at the same time recognize the temptation to use conservation as an excuse for stabilization, for building up profits in one state at the cost of the other states. Conservation is primarily a national problem, and danger may lie in Congress tying itself too tightly to a solution of that problem that is apt to be too greatly influenced by local and selfish considerations.

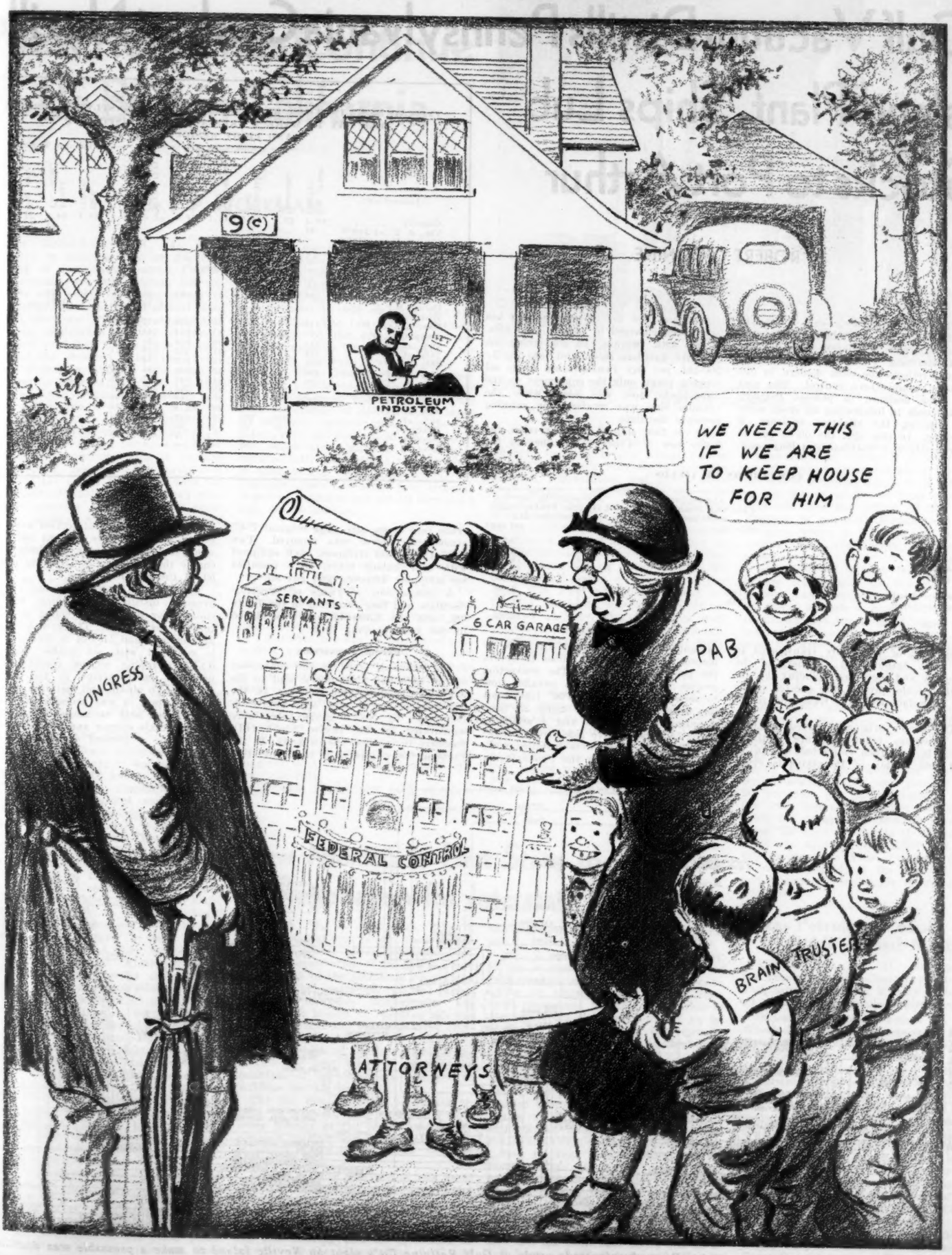
"These observations are submitted to the Congress and the petroleum industry for their consideration in the hope that further discussion may clarify the questions involved."

Would Repeal Gasoline Tax

A proposal to repeal the federal gasoline tax was submitted to the Senate

(Continued on Page 32)

Renew the Old Lease; He's Satisfied



—Drawn exclusively for The Oil and Gas Journal

Gulf Vacuum Distills Pennsylvania Crude at Neville Island Plant, Ships Lub Stocks to Port Arthur

By ROBERT C. CONINE

PITTSBURGH, Pa., Jan. 19.—The newly converted 3,300-bbl. atmospheric-vacuum crude distillation unit at the Gulf Refining Co.'s plant on Neville Island, reflects the most modern in distillation temperature control. The unit has been designed to process Pennsylvania crude to lubricating oil stock without causing the slightest evidence of cracking. In this unit the oil is run to a pressable wax distillate and long residuum, both of which are transported to the Port Arthur, Tex., refinery of the company and there, by including the use of the Alchlor process, the selected stocks are manufactured into Gulfpride motor oils.

The heater originally served a 4,000-bbl. vacuum rerun pressure distillate unit. It was then converted to run 1,500 bbls. a day of Pennsylvania crude oil without the use of vacuum and has since been enlarged to handle 3,300 bbls. a day with vacuum. In converting the pressure distillate rerun unit into the 1,500-bbl. per day Pennsylvania crude oil topping plant, only the equipment on the atmospheric side was used, while the vacuum side was retained for running pressure distillate.

In the first step of the conversion, the lower row of 4-inch O.D. tubes in the radiant section of the pipe still were replaced with 3-inch O.D. tubes to obtain the proper oil velocity. The convection section was changed from parallel flow to series flow. A new 6'96' fractionating tower was installed using 25 fractionating bubble trays and 4 stripping trays. A total of five side stream drawoffs from the tower were installed making it possible to split the Pennsylvania crude into seven cuts. The original 7'-6" atmospheric tower was removed. Two 2'-6" I.D. steam strippers, each equipped with four bubble trays, were installed for stripping kerosene and gas oil.

A comparison of yields of pressable distillate and long residuum in the 1,500-bbl. and the 3,300-bbl. units is shown in the accompanying table.

COMPARISON OF YIELDS

	Operation			
	Atmospheric 1,600 bbls. Pennsylvania crude per day		Atmospheric-vacuum 3,345 bbls. Pennsylvania crude per day	
	bbls./day	per cent	bbls./day	per cent
Gas	...	...	88	2.63
Gasoline	...	...	708	21.16
Naphtha	...	...	458	13.68
Kerosene	...	...	441	13.19
Gas oil	...	...	568	16.99
Pressable distillate	148	9.24	318	9.52
Long residuum	346	21.64	764	22.83
Lub yield		30.88		22.35

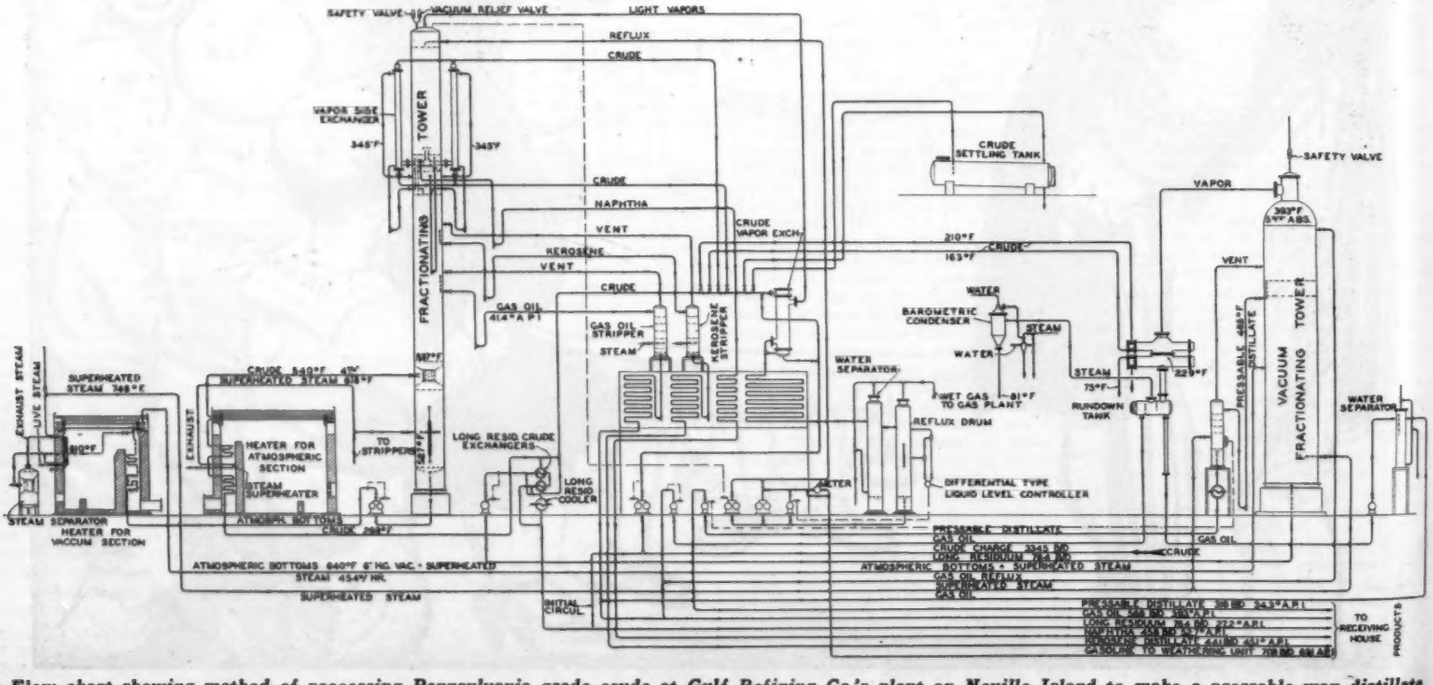
TYPICAL RESULTS WHEN RUNNING 3,300 BBLS. PENNSYLVANIA CRUDE PER DAY TO MAKE A PRESSABLE WAX DISTILLATE AND LIGHT RESIDUUM

	Atmospheric Tower							Vacuum Tower		
Inspection:	Pa. crude charge	Gasoline dist.	Naphtha dist.	Kerosene dist.	Lt. G.O.	Hvy. G.O.	Med. G.O.	Red. crude	Press. Pa. dist.	Pa. cyl. stock
Gravity	44.3	69.1	52.7	45.1	41.4	37.6	39.3	31.1	34.3	27.3
Vis., S. U. at 100°F.	38	....	..	....	....	....	....	....	88	....
Vis., S. U. at 210°F.	....	....	..	....	....	....	....	....	..	117
Vis. Say. Ther.:										
Viscosimrete, 60°F.	....	..	..	430	..	....	....	..	..	....
Flash, T.C.C. °F.	....	....	....	143	....	....	....	..	..	....
Flash O.C. °F.	....	....	....	....	....	....	....	..	....	530
Fire O.C. °F.	....	....	....	....	....	....	....	..	..	....
Pour, °F.	40	....	....	....	15	35	25	75	75	45
Color, N.P.A.	....	....	..	....	....	1.25	1 75	....	1.75	....
Distillation:										
Over point °F.	118	92	210	358	268	477	380			
Endpoint, °F.	....	315	430	546	624	644	659			
10% at °F.	212	144	294	395	464	536	498			
20% at °F.	280	166	309	411	499	559	531			
30% at °F.	351	184	319	423	521	574	549			
40% at °F.	436	206	326	433	534	586	562			
50% at °F.	529	212	333	443	545	597	573			
60% at °F.		224	340	454	555	608	586			
70% at °F.	..	237	348	466	566	619	600			
80% at °F.	..	250	359	481	578	630	615			
90% at °F.	..	274	378	501	595	646	634			
Recovery %	..	96	98	98	98	98	98			
Residue %	..	1	1	1	1	1	1			
Loss %	...	3	1	1	1	1	1			

Recent Conversion

The principal steps in the conversion of the 1,500-bbl. atmospheric unit to the 3,300-bbl. vacuum unit follows: In the atmospheric tower pipe still twelve 4-inch O.D. by No. 6 gauge tubes were substituted for the twelve 3-inch O.D. members to increase the capacity. In the vacuum tower pipe still the convection section and the radiant section were connected in single pass and an additional small steam superheater was installed to enable the induction of steam to the inlet of the radiant section.

The vacuum tower on the original pressure distillate rerun unit was reclaimed for service by welding on a section at the bottom. The new section is 22 feet long and 11 feet in diameter and is equipped with six bubble trays. A 5'x16' stripping section completed the principal modifications in the vacuum column. To obtain and maintain vacuum in this tower it was necessary to add a crude-vapor heat exchanger, a two-stage steam jet air ejector and one barometric condenser; a pressed distillate stripper and cooler.



Flow chart showing method of processing Pennsylvania grade crude at Gulf Refining Co.'s plant on Neville Island to make a pressable wax distillate and long residuum

New Refineries Continue to Be Built in California

By L. P. STOCKMAN

LOS ANGELES, Calif., Jan. 21.—Contrary to economic law, in this case the law of diminishing returns, California operators are still building new refineries and every indication points to the probable construction of several more within the year. This new construction is being undertaken because of greatly improved conditions in the crude oil market and the probability that the Pacific Coast Petroleum Agency will continue to function after expiration of the time limit on June 30 and thus stabilize gasoline prices. The latter seems to be the dominating factor because, unless the price structure is stabilized, many of these small plants can not cope with unrestricted competition. This is particularly true if violators of the curtailment program are forced to comply with the prescribed allowables as compulsory compliance prevents the purchase of crude oil by smaller refiners below posted prices.

All of the new plants that have been erected in California during the past few months have been small units with a charging capacity ranging all the way from 500 bbls. per day to 2,500 bbls. In several installations, some of the equipment is new and the balance old material that has been salvaged from some defunct plant. Few of the plants have any diversity or flexibility of operation and consequently the production of gasoline, kerosene, kerosene distillate, gas oil, diesel and residum varies according to the construction and type of equipment used.

New Plants

On the Long Beach highway, near Seal Beach, Louis Steiner is building a new plant which will be known as the Seal Beach Refining Co. Construction work is about half completed and tentative plans call for the starting of operations shortly after February 1. Charging capacity will approximate 750 bbls. per day. Another new refinery is projected for erection in the Hynes area a few miles outside of the Long Beach Field of Los Angeles basin. This new plant will be built by Harry Brown and while material is not yet on ground it should be delivered to the job soon. In the meantime, the property is being graded and foundations laid. The Bellview Oil Co. completed a new refinery at Santa Fe Springs a few weeks ago using a combination of new and salvaged equipment. About a week or so after it was placed in operation, a heat exchanger blew out and killed one of the employes and injured two others. Edward Paan, superintendent of the plant died several days later from burns and injuries sustained. The Bellview refinery, which has a charging capacity of 2,250 bbls. per day will be operating again within another week as repairs are being rushed to completion. On the basis of 2,250 bbls. of Santa Fe Springs crude oil run to stills, gasoline production should approximate 35,000 gallons per day.

In the Bandini-Telegraph area between Los Angeles and Santa Fe Springs, the Sterling Refining Co. took over the equipment of the Atlas Lubricating Oil Co. several months ago and has reconditioned and remodeled the entire plant. G. M. Fitch, formerly with the Shell Oil Co., is general manager and in direct charge of operations. This is strictly a topping plant, the principle products being motor fuel, gas oil and residuum. The motor fuel does not meet specifications of U. S. Motor grades and consequently must be sold as motor fuel and not gasoline. The Los Angeles Refining Co. completed the erection of a new refinery opposite The Petrol Corp.'s refinery on Bandini Boulevard early in January. Glenn Dies is general manager. Gasoline production is being sold under the trade name of Larco. The plant has a daily capacity of 2,000 bbls. of crude oil and will produce diesel, engine distillate, road and fuel oil. In the Huntington Beach area, Margold and Thegard have recently completed a topping plant at Garfield and Seventeenth Street. The principle product is motor fuel, although of course residuum and gas oil also comes over in the stream.

Road Oil Plant

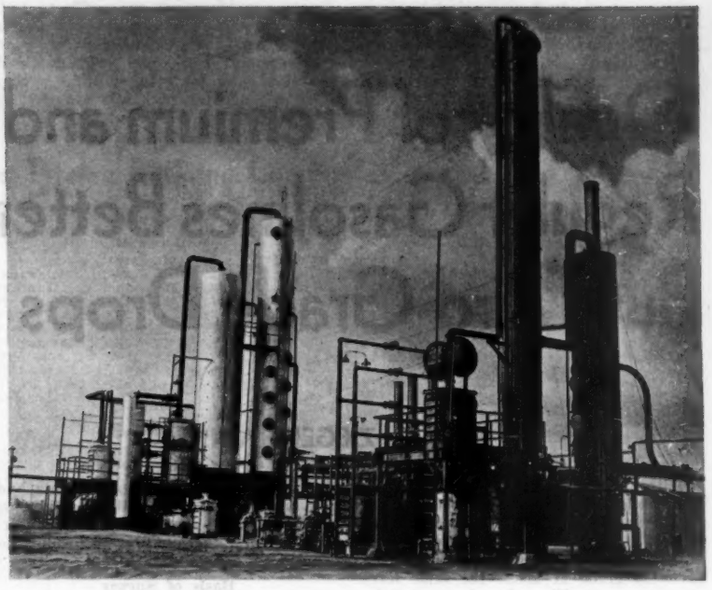
The Mohawk Petroleum Co. recently completed construction work on a new asphalt and road oil unit in the Fruitvale area of Kern County where the company erected a 5,000-bbl. skimming plant several years ago. Mohawk's new installation, which has a rated capacity of 1,500 bbls. per day, is so located with respect to existing facilities that both the skimming plant and road oil unit can be operated by the same crews and thus effect a substantial reduction in operating expenses. The road oil unit is especially flexible and its adaptability permits the production of 50-60, 60-70, 70-80 or 80-90 road oils which are required to meet contracts made by the company in Arizona, Nevada and Northern California.

Operation of the new road oil plant is entirely automatic due to the use of Foxboro instruments and Fisher remote control. Automatic controls to maintain constant temperatures and liquid levels were installed along the flow line with the result that operation requires very little attention. The plant was constructed by Southwestern Engineering Corp. in a period of 30 days and that it came up to specifications is evidenced by the fact that it exceeded its rated capacity by 30 per cent during a test run of five days. The road oil unit was laid out by J. A. Robinson, superintendent of the Mohawk refinery. The plant is a complete unit and does not function in conjunction with the skimming plant located on the same property.

Operation

From storage facilities the crude oil passes through heat exchangers and thence to a flash tower where the lighter gasoline fractions are vaporized. These vapors are carried to the main fractionator where they combine with the gasoline vapors going to the primary gasoline condensor. The partially topped crude is removed from the bottom of the flash tower and discharged through a tube still from whence it is introduced into the main fractionator where, through the use of stripping steam, it is reduced to the desired grades of road oil. The road oil from the bottom of the fractionator is pumped through heat exchangers where it is cooled by the incoming crude and thence conveyed to storage.

Vapors liberated from the hot crude in the fractionator are separated into gasoline and gasoline fractions. The gas oil flows through a cooler on its way to storage and the gasoline vapors pass overhead to the primary condenser. The gasoline, after dehydration, is pumped part to storage and part back to the main fractionator for reflux. The fractionator is in two sections due to the fact that the Mohawk already had a bubble tower suitable for a portion of the fractionator. Crude oil produced in the Fruitvale Field of Kern County has been found suitable for use in the new road oil unit as this oil is too lean to justify normal distillation for gasoline. Approximately 8 per cent gasoline and 20 per cent gas oil is removed from the crude before the finished road oil is ready for storage. The Mohawk produces about 750 bbls. per day in the Fruitvale Field and approximately 3,500 bbls. per day at Mountain View. Fruitvale crude is used exclusively in the road oil unit and Mountain View crude in the skimming plant.



New road oil unit recently completed at Fruitvale, Calif. refinery, of the Mohawk Petroleum Co.

New Mexico Is First State to Approve Negotiation for Interstate Compact

SANTA FE, N. Mex., Jan. 21.—A bill authorizing negotiations to be begun for establishment of an interstate compact for conservation of oil and gas and stabilization of the petroleum supply and carrying the emergency clause, which makes it effective immediately, has passed both houses of the New Mexico Legislature and has been signed by Governor Clyde Tingley.

The unanimous action makes New Mexico the first State to approve the principle of an interstate compact to stabilize the oil business.

The bill was sponsored by Hiram M. Dow, of Roswell, who represented Governor Tingley at the recent Ponca City compact hearing, and was introduced by Milton R. Smith in the House. The bill follows:

Section 1. The governor of this State is authorized to appoint a representative or representatives to meet with representatives to be appointed by other oil producing states, for the purpose of negotiating and entering into an agreement or compact for the conservation of oil and gas, and the stabilization of the American petroleum supply as provided in this act.

Sec. 2. Such agreement or compact, if one is made, may be in the form of reciprocal legislation which the representative or representatives of this State shall recommend to the consideration of the legislature or in the form of an instrument to be signed by the representative or representatives of the states entering into the compact.

Sec. 3. No agreement or compact authorized by this act shall bind this State unless and until said compact shall be ratified by the legislatures of two of the States of Texas, Oklahoma, California and Kansas, and the legislature of this State, and Congress shall consent thereto.

Sec. 4. That it is necessary for the reservation of the public peace, health and safety of the inhabitants of the State of New Mexico that the provisions of this act shall become effective at the earliest possible time, and therefore an emergency is hereby declared to exist, and this act shall take effect and be in full force and effect from and after its passage and approval.

Texas Petroleum Council Holds Annual Meeting

AUSTIN, Tex., Jan. 21.—Members of the Texas Petroleum Council, at the annual meeting in Austin Monday re-elected all officers and incumbent directors.

Officers re-elected were: R. L. Wheelock of Corsicana, president; John E. Kilgore of Wichita Falls, legal vice president; E. O. Buck of Houston, technical vice president, and Allen V. Peden of Austin, vice president and secretary.

New directors elected were: Ed Freeman, Texas Co., Houston, to replace Fred Sealy of the same company, resigned; R. H. Morrison, California Co., Dallas; E. H. Blum of the Atlantic Oil Producing Co., Dallas; W. F. Knode, Austin; R. S. McFarland of the Texas Seaboard Oil Co., Dallas; Clyde Pape of the Selby Oil & Gas Co., Tulsa; H. B. Simcox of the Cintinental Oil Co., Fort Worth; Claire M. Bryson, British-American Oil Co., Tyler; S. Maston Nixon, Southern Alkali Corp., Corpus Christi; J. C. Hunter, Gregg Co., Gladewater; Barnsdall Corp., Tulsa; B. C. Clardy, Shell, Houston.

Quality of Premium and Regular Gasolines Better But Third Grade Drops

By W. T. ZIEGENHAIN

Better motor fuels are being sold to the public this winter than ever before. Refiners and marketers are placing emphasis upon their regular or house brands and are holding the quality of the premium grade at about the same level as a year ago. There has been a slight falling off in the quality of the third grade. These conclusions are drawn from data contained in the fifth annual survey of motor fuel quality conducted by The Oil and Gas Journal.

Improved volatility, which means easier starting and speedier cold-motor acceleration is quite apparent in the regular grade fuels, is realized to a lesser extent in the premium grade and the reverse is seen in the third grade.

No Increase in Octane

Also, for the first time since the survey was started, there is no increase in the average octane number of either the regular or premium grades and a one-point reduction is shown in the average of the third grade fuels. The conclusion may be drawn that, temporarily at least, we have reached an optimum point in balancing cost of gasoline manufacture with present day motor car needs in what has appeared to be a determined race to increase compression ratios on the part of the motor car manufacturer and more costly high antiknock fuels on the part of the refiner.

Thus attention has been turned back to the old problem of equilizing the distillation curve and away from the feverish desire to build up octane values.

These conclusions are made to apply generally while the samples have been collected only at scattered middle western points. It might have been better to have said that the results of the survey permitted certain deductions to be drawn in regard to motor fuels sold throughout the 20 or more central states except that it is known that refiners generally have standardized the specifications of their gasolines and as the larger units fostered national distribution there has been an overlapping of marketing territories so that competition has forced a standardizing of motor fuel quality from the Atlantic to the Pacific and from the Gulf to Canada. With this true today to a greater extent than ever before, it is reasonable to say that what is happening to the gasoline quality throughout the vast midwestern area, the same tendency appears in the balance of the country.

Another factor that was worked toward standardization of motor fuel quality is the practice of refiners to sell independent jobbers exactly the same gasoline as sold through their own stations. As the result the refiner can claim no superiority in quality. As a matter of fact, the jobber is in a position to force improvements to be made in the quality of the supplier's gasoline whenever the jobber finds he could handle some other refiner's gasoline that he thinks is better. So this network of dealer accounts will not permit any great difference in motor fuel quality to exist at any one point for any great length of time and as long as refiners are soliciting dealer accounts and are anxious to expand their marketing territories there can be no great difference in motor fuel quality throughout the country.

Basis of Survey

With these truths known, The Oil and Gas Journal adopted a simple course of reporting annually the trend in motor fuel quality. In actual practice samples of gasoline are collected from company-owned stations in Cleveland, Chicago, Kansas City, Fort Worth and Tulsa. In all cases the gasoline supplied to these stations comes from the refineries of the operating companies so there is no chance of collecting duplicates by reason of the fact refiners practice "swapping" gasoline on a large scale. Samples are collected of the regular, premium and third grade gasolines of the same 12 companies year after year and these are taken and transported to the laboratory in accordance with the prescribed methods of the American Society for Testing Materials. The samples are tested in the same laboratory with equal care and in accordance with accepted practices so that the results are comparable year after year. The companies from whose stations samples are purchased include the Standard Oil Co. of Ohio, Skelly Oil Co., Cities Service Oil Co., Barnsdall Oil Co., Mid-Continent Petroleum Corp., Phillips Petroleum Co., Sinclair Refining Co., Magnolia Petroleum Co., Gulf Refining Co., Texas Co. and the Standard Oil Co. (Indiana). This, of course, does not represent a complete list of the important refining companies which operate stations throughout the Middle West but the composite controls the trend of motor fuel quality in the area and the results of tests on the samples of this group would not be far from those drawn from a more elaborate survey.

Regular Grade

Passing from generalities to the actual results of the survey the improvement in the volatility of the regular or middle grade motor fuel proves to be most interesting this year. Of the 12 samples of regular fuel tested 10 of them had lower 10 per cent distillation points, one was the same as last year and only one was higher. At the 20 per cent point, 11 of the 12 showed improved volatility. At the 50 per cent point, nine gasolines showed greater volatility and three were less volatile than a year ago.

Studying the accompanying table of tests further, it will be seen that the average 10 per cent point dropped from 135° F. a year ago to 127° F. this year. Of the samples tested the maximum drop for any one company was from 150° F. to 133° F. this year. Because the average for the group was 127° F. this year, the lower 10 per cent mark of this one company indicates its decision to "get in line." The largest drop in the 20 per cent point of any regular gasoline is shown for that of Company A. Here the 20 per cent dropped from 160° F. a year ago to 135° F. this year. It might be interesting to recollect that not many years ago the initial point for U. S. Motor gasoline according to federal specification was permitted to be 131° F.

Passing on to the 50 per cent point, the average of the regular gasolines tested showed a drop from 242° F. a year ago to 231° F. this year. This reduction of 11° F. in the average at the 50 per cent point is more than was shown as a change in any other point on the distillation curve. The most drastic change is shown by Company F in which case the 50 per cent point was reduced from 210° F. a year ago to 161° F. at present. This change emphasizes the fact that Company E allowed the 50 per cent point to rise from 240° F. a year ago to 251° F. this year.

Thus far, nothing has been said of the endpoints of the various grades of gasoline but it is significant that in all instances, lower averages are reported. In the regular grade, this reflects the desire of certain refiners to gain volatility by cutting of the heavy ends while the other group of refiners is almost ignoring endpoint and gaining volatility by increasing the amount of natural gasoline used or is using a larger proportion of stabilized refinery vapor recovery gasoline. In the past year the two schools of thought have taken more definite stands. Those companies which manufacture or buy natural gasoline to advantage, champion the idea that better motor fuels can be made by blending a larger proportion of natural with the regular refinery production, and do not recommend reducing the higher boiling point fractions. That group claims easier starting and maintenance of power with a resulting saving in fuel for the winter. It also points out the need to improve volatility at the 50 per cent point as well as at the front of the curve.

The other group of refiners attack the problem in two different ways. Some reason that it would be advisable to improve the front end volatility by blending butane into the fuel. This butane is accumulated at a number of plants during the summer and fall months and is held in refrigerated pressure storage to be blended into the refinery production in winter. The practice supplies the desired front end volatility and eliminates the purchase of natural gasoline for this purpose. Just which school of thought is correct and to what degree one or the other might have overstepped the optimum point in order to take advantage of his natural position, cannot be stated here and is another one of those discussions that will not be settled in the laboratory but by the buying public.

Before leaving the subject of volatility it should be pointed out that with the rather sharp reduction of distillation points all along the curve, the average Reid vapor pressure of the fuels this year was .9 pound higher than a year ago.

Premium Grade

In reviewing the tests on the premium fuels, one cannot but notice the uniformity of quality among the fuels of all 12 companies. This of course is a desirable factor and reflects the work of the Ethyl Gasoline Corp. to a large extent. To say that the premium fuels remains uniformly good, sums up the situation for the present except for the fact that three important refining companies have seen fit to introduce "aviation" grade motor fuels as their premium grade and none such fuels is represented among the samples tested for the survey.

At this moment, these fuels are not being distributed throughout the entire marketing territories of the respective companies but their sale is being restricted to a relatively small area in the north and northeast where winters are most severe. In time, these fuels may find their way into a much broader market and there is little doubt but that competition will drive to make this come true and in turn may further the improvement of volatility in the regular grade fuels as well.

Third Grade

Less enthusiasm can be shown for the

Trend in Quality of Winter Motor Fuels

Average of laboratory tests made on samples of gasoline purchased at scattered points in middle western states from representative company-operated stations, about January 1 of each year.

Regular Grade

	1931	1932	1933	1934	1935
Octane number	60	61	65	69	69
Initial point, °F.	97	94	94	92	90
10 per cent, °F.	148	143	139	135	127
20 per cent, °F.	182	173	166	163	153
50 per cent, °F.	265	256	247	242	231
90 per cent, °F.	373	377	365	354	352
Endpoint, °F.	411	404	406	403	400
Recovery, per cent	96.9	96.7	96.5	96.7	96.4
R.V.P., pounds	6.4	9.0	9.5	9.5	10.4

Premium Grade

	1931	1932	1933	1934	1935
Octane number	72	74	76	75	75
Initial point, °F.	94	97	96	93	94
10 per cent, °F.	141	146	142	136	132
20 per cent, °F.	170	171	177	163	157
50 per cent, °F.	246	243	237	235	225
90 per cent, °F.	361	352	350	344	338
Endpoint, °F.	403	393	399	394	392
Recovery, per cent	97.6	96.9	96.4	97.1	96.9
R.V.P., pounds	7.5	8.1	9.0	8.8	9.6

Third Grade

	1932	1933	1934	1935
Octane number	51	53	53	52
Initial point, °F.	102	96	94	97
10 per cent, °F.	152	148	146	148
20 per cent, °F.	193	181	180	181
50 per cent, °F.	276	264	252	261
90 per cent, °F.	380	368	367	373
Endpoint, °F.	426	426	425	421
Recovery, per cent	97.3	97.3	97.5	97.0
R.V.P., pounds	6.5	7.6	8.4	7.8

quality of the third grade gasolines than in the case of either the regular or premium grade. Generally speaking, it has not held its own and now comes closer to being "third grade" gasoline than ever before.

There has been a reduction in the octane value from 53 a year ago to 52 at present and except for a reduction in the endpoint the entire distillation curve is less attractive. It might be interesting to note that the average temperature at the 50 per cent distillation point rose from 252° F. a year ago to 261° F. this year.

In conclusion it may be pointed out that gasolines are approaching a standard in each of the three price classifications and that sharper lines identify these divisions. The motorist is more nearly getting what he pays for and he is not so likely to buy a bargain in the third grade. There is promise of the premium grade violating this tendency to consolidate and standardize quality through the introduction of the "aviation grade" premium fuels but in practice the effect may be less than the dramatic introduction of these fuels indicate.

Tests on Three Grades of Gasoline Sold by the Same Twelve Refining Companies in Past Five Winters

COMPANY A

Regular Grade

	1931	1932	1933	1934	1935
Octane No.	56	60	65	70	70
Initial	91	100	90	90	91
10 per cent	156	152	130	130	115
20 per cent	190	180	156	160	136
50 per cent	266	258	234	237	216
90 per cent	378	360	352	348	355
Endpoint	427	400	393	394	417
Recovery	97.0	97.0	96.0	96.0	96.0
V. P.	5.1	8.2	10.7	9.7	11.2
Color	21	20	C	C	C

Premium Grade

Octane No.	73	75	77	77	76
Initial	88	98	90	92	88
10 per cent	132	150	136	136	124
20 per cent	164	178	169	162	148
50 per cent	258	248	260	236	230
90 per cent	385	350	360	342	356
Endpoint	410	394	394	394	402
Recovery	96.5	97.5	96 0	97.0	97.0
V. P.	10.0	7.8	10.4	8.9	12.3
Color	red	red	red	red	red

Third Grade

Octane No.	56	54	52	50	
Initial	96	90	98	104	
10 per cent	140	137	150	162	
20 per cent	174	164	188	194	
50 per cent	290	257	264	270	
90 per cent	394	366	376	380	
Endpoint	415	409	428	426	
Recovery	97.0	98.0	97.5	98.0	
V. P.	7.8	7.2	7.5	6.6	
Color	C	C	30	22	

COMPANY B

Regular Grade

	1931	1932	1933	1934	1935
Octane No.	61	61	66	67	70
Initial	100	89	101	90	87
10 per cent	145	144	160	132	121
20 per cent	178	180	190	162	143
50 per cent	262	262	262	241	225
90 per cent	380	374	370	360	357
Endpoint	412	400	410	406	398
Recovery	96.0	95.0	98.0	96.0	96.5
V. P.	6.0	11.3	9.2	10.0	10.5
Color	24	30	28	C	C

Premium Grade

Octane No.	70	70	72	70	76
Initial	92	92	94	90	91
10 per cent	134	136	136	128	119
20 per cent	162	160	156	154	141
50 per cent	245	228	218	224	208
90 per cent	369	340	322	326	327
Endpoint	395	384	382	382	378
Recovery	95.0	96.0	97.0	97.0	97.0
V. P.	10.2	9.5	10.2	9.4	9.8
Color	..	..	..	C	red

Third Grade

Octane No.	54	54	58	52	
Initial	94	104	92	92	
10 per cent	150	156	146	138	
20 per cent	190	185	175	167	
50 per cent	276	260	242	243	
90 per cent	378	385	345	363	
Endpoint	426	427	420	421	
Recovery	96.5	97.0	97.0	96.5	
V. P.	9.0	7.5	9.4	9.2	
Color	C	C	C	30	

COMPANY C

Regular Grade

	1931	1932	1933	1934	1935
Octane No.	62	48	65	66	70
Initial	98	98	100	94	94
10 per cent	161	156	145	138	131
20 per cent	185	188	176	162	155
50 per cent	269	264	258	244	232
90 per cent	382	380	372	368	365
Endpoint	420	417	417	408	407
Recovery	96.5	97.5	96.0	97.5	97.0
V. P.	6.8	7.5	8.4	8 2	9 2
Color	30	30	14	C	C

Premium Grade

Octane No.	72	73	78	76	75
Initial	93	102	93	90	100
10 per cent	136	152	130	137	138
20 per cent	166	180	154	170	156
50 per cent	250	250	217	242	232
90 per cent	390	362	326	356	360
Endpoint	424	400	382	394	406
Recovery	96.0	97.5	96.0	97.0	98.0
V. P.	8.5	7.7	10 0	8.9	7.5
Color	red	red	red	red	red

Third Grade

Octane No.	49	49	51	53	
Initial	102	98	92	98	
10 per cent	160	145	140	139	
20 per cent	188	177	174	168	
50 per cent	263	274	256	251	
90 per cent	386	374	380	382	
Endpoint	421	420	424	417	
Recovery	97.5	97.0	97.0	96.5	
V. P.	7.3	7.3	10.6	8.6	
Color	C	22	28	20	

COMPANY D

Regular Grade

	1931	1932	1933	1934	1935
Octane No.	53	60	62	70	68
Initial	103	95	92	88	90
10 per cent	158	142	138	128	126
20 per cent	194	176	167	153	152
50 per cent	278	258	248	238	236
90 per cent	386	374	382	359	364
Endpoint	419	418	419	405	404
Recovery	97.5	97.0	96.0	96.0	97.0
V. P.	5.5	8 8	10.0	11.0	10.8
Color	24	22	27	C	C

Premium Grade

Octane No.	73	75	76	..	74
Initial	102	97	96	..	96
10 per cent	158	148	136	..	148
20 per cent	191	178	155	..	164
50 per cent	276	248	224	..	240
90 per cen	380	350	328	..	357
Endpoint	414	396	385	..	404
Recovery	98.0	97.0	96.5	..	98,0
V. P.	5.2	7.4	9.6	..	9.1
Color	red	red	red	..	red

Third Grade

Octane No.	46	50	52	48	
Initial	106	102	94	112	
10 per cent	168	156	144	173	
20 per cent	198	190	170	198	
50 per cent	274	280	252	272	
90 per cent	388	396	378	378	
Endpoint	429	426	432	426	
Recovery	98 0	97.0	98.0	98.0	
V. P.	5.7	6.6	8 0	5.2	
Color	C	30	30	26	

COMPANY E

Regular Grade

	1931	1932	1933	1934	1935
Octane No.	59	58	61	69	69
Initial	98	100	98	87	88
10 per cent	153	150	150	126	127
20 per cent	190	178	180	156	171
50 per cent	276	250	260	240	251
90 per cent	375	350	374	364	363
Endpoint	416	395	418	420	424
Recovery	97 0	97.5	97.0	96 0	96.5
V. P.	4.9	8.0	8.4	11 6	9.7
Color	19	26	26	C	C

Premium Grade

Octane No.	72	75	65	77	74
Initial	89	98	118	94	92
10 per cent	136	150	178	140	135
20 per cent	166	176	200	166	169
50 per cent	248	250	262	246	254
90 per cen	360	352	376	366	370
Endpoint	404	395	426	420	418
Recovery	96.5	97.5	98.0	97 5	97.0
V. P.	6 8	7.3	4.4	8 7	9.0
Color	red	red	red	C	red

Third Grade

Octane No.	50	52	54	54	
Initial	103	95	90	92	
10 per cent	158	150	136	137	
20 per cent	196	187	171	169	
50 per cent	286	270	257	261	
90 per cent	392	385	380	377	
Endpoint	434	430	428	425	
Recovery	97.0	97.0	96.5	96 5	
V. P.	5.7	7.2	10.0	9.8	
Color	C	C	30	30	

COMPANY F

Regular Grade

	1931	1932	1933	1934	1935
Octane No.	64	60	64	70	69
Initial	95	84	90	92	84
10 per cent	132	116	122	123	109
20 per cent	154	132	142	140	120
50 per cent	234	206	219	210	161
90 per cent	376	371	386	362	313
Endpoint	422	420	418	412	405
Recovery	97.0	97.0	96.0	97.5	97.0
V. P.	8.6	12 0	10.7	10.6	12.6
Color	26	30	17	C	C

Premium Grade

Octane No.	72	71	78	78	75
Initial	94	94	92	92	92
10 per cent	130	128	122	124	111
20 per cent	152	146	140	142	118
50 per cent	230	225	209	210	142
90 per cent	365	368	374	335	261
Endpoint	408	414	423	358	385
Recovery	96 5	98.5	97.0	98.0	96.5
V. P.	9.6	8.5	10.5	9.5	11.5
Color	red	red	red	red	red

Third Grade

Octane No.	46	51	53	51	
Initial	104	90	89	101	
10 per cent	166	135	135	153	
20 per cent	204	170	173	185	
50 per cent	286	235	260	262	
90 per cent	389	367	356	375	
Endpoint	422	431	392	426	
Recovery	97.5	97.0	97.0	97.0	
V. P.	5.0	8 4	10.0	6.7	
Color	C	C	30	8	

COMPANY G

Regular Grade

	1931	1932	1933	1934	1935
Octane No.	58	66	60	70	69
Initial	92	96	94	88	87
10 per cent	142	140	140	134	127
20 per cent	178	174	165	164	158
50 per cent	274	257	251	242	241
90 per cent	362	350	362	354	359
Endpoint	390	382	397	392	394
Recovery	96.5	97.0	98.0	97.0	96.0
V. P.	6.3	8.4	7.5	9.7	10.7
Color	21	21	30	C	C

Premium Grade

Octane No.	71	77	79	71	75
Initial	92	99	96	91	89
10 per cent	140	146	145	134	130
20 per cent	169	178	173	170	161
50 per cent	240	242	240	252	243
90 per cen	344	342	352	356	364
Endpoint	407	378	388	392	392
Recovery	96.5	96.0	95.5	92.0	95.0
V. P.	6.8	9 3	8.5	9.8	9.7
Color	red	red	red	red	red

Third Grade

Octane No.	51	56	53	52	
Initial	103	92	88	92	
10 per cent	164	139	134	143	
20 per cent	200	166	174	182	
50 per cent	268	254	269	267	
90 per cent	368	360	356	375	
Endpoint	402	399	392	408	
Recovery	96.0	98.5	97.0	97.0	
V. P.	6.4	7.4	10.0	8.5	
Color	C	28	30	20	

COMPANY H

Regular Grade

	1931	1932	1933	1934	1935
Octane No.	56	65	66	68	70
Initial	99	95	95	94	93
10 per cent	160	144	133	146	135
20 per cent	194	176	160	174	164
50 per cent	262	253	245	252	248
90 per cent	366	365	353	356	354
Endpoint	412	402	394	394	399
Recovery	97.5	96.0	97.0	96.0	96.5
V. P.	5.8	8.2	8.4	7.3	8.2
Color	24	28	18	C	C

Premium Grade

Octane No.	72	75	78	76	72
Initial	85	96	98	92	104
10 per cent	134	151	156	137	150
20 per cent	168	172	182	170	173
50 per cent	256	246	244	246	246
90 per cen	378	371	360	356	354
Endpoint	399	404	406	390	408
Recovery	95.0	95.5	97.0	97.0	97.5
V. P.	9.1	7.0	7.7	8.4	6.5
Color	red	red	red	C	red

Third Grade

Octane No.	56	49	53	46	
Initial	97	96	95	92	
10 per cent	151	143	150	142	
20 per cent	189	179	180	182	
50 per cent	269	272	250	283	
90 per cent	384	371	377	392	
Endpoint	422	418	422	427	
Recovery	97.0	97.0	98.0	96.5	
V. P.	7.0	7.5	7.8	8.2	
Color	C	19	..	30	

COMPANY I

Regular Grade

	1931	1932	1933	1934	1935
Octane No.	63	64	66	70	68
Init al	98	90	90	100	92
10 per cent	152	140	132	150	138
20 per cent	185	173	162	180	167
50 per cent	260	256	238	252	247
90 per cent	355	370	350	350	364
Endpoint	392	405	398	412	401
Recovery	97.0	95.0	96.0	98 0	96.5
V. P.	6.8	11.0	10.2	7.5	9.0
Color	16	C	C	..	C

Premium Grade

Octane No.	70	76	76	73	76
Initial	101	101	98	98	95
10 per cent	148	152	151	149	140
20 per cent	171	182	180	176	165
50 per cen	236	256	251	244	218
90 per cent	321	362	360	350	305
Endpoint	377	394	399	394	368
Recovery	98.0	96.0	97 5	97.0	97.0
V. P.	5.9	7.0	7.4	7.2	8.6
Color	red	red	red	red	red

Third Grade

Octane No.	46	60	53	54	
Initial	116	94	106	96	
10 per cent	176	154	160	148	
20 per cent	205	186	190	183	
50 per cent	267	258	251	256	
90 per cent	367	361	352	373	
Endpoint	425	419	403	416	
Recovery	97.0	98.0	98.0	98.0	
V. P.	4.0	7.8	6.2	7.5	
Color	22	22	16	zero	

COMPANY J

Regular Grade

	1931	1932	1933	1934	1935
Octane No.	64	60	66	68	69
Initial	98	98	89	98	93
10 per cent	148	148	132	140	129
20 per cent	181	180	156	170	162
50 per cent	258	258	234	238	246
90 per cent	358	370	348	350	364
Endpoint	398	404	388	398	397
Recovery	97.0	97.0	96.0	97.5	96.5
V. P.	5.7	7.2	9.8	7.8	10.2
Color	28	29	27	C	C

Premium Grade

Octane No.	72	76	78	78	74
Initial	97	99	95	94	91
10 per cent	148	143	140	136	130
20 per cent	180	176	170	162	162
50 per cent	248	254	250	220	246
90 per cent	358	364	352	320	360
Endpoint	401	398	381	378	387
Recovery	97.0	97.0	96.0	97.0	95.0
V. P.	6.9	8.1	9.2	9.5	11.0
Color	red	red	red	red	red

Third Grade

Octane No.	52	55	46	55	
Initial	104	97	94	97	
10 per cent	164	154	161	148	
20 per cent	196	184	194	186	
50 per cent	270	262	272	267	
90 per cent	374	387	382	380	
Endpoint	414	434	418	420	
Recovery	98.0	96.0	98.0	97.0	
V. P.	6.4	7.6	7.3	7.8	
Color	C	21	30	15	

COMPANY K

Regular Grade

	1931	1932	1933	1934	1935
Octane No.	58	58	66	68	68
Initial	94	90	87	88	87
10 per cent	136	134	137	126	118
20 per cent	168	168	174	153	146
50 per cent	278	260	259	226	237
90 per cent	380	365	367	332	357
Endpoint	418	397	396	387	394
Recovery	97.5	97.5	95.0	96 0	95.5
V. P.	6.7	9.1	10.4	10 8	12.4
Color	30	30	26	C	C

Premium Grade

Octane No.	73	74	76	76	76
Initial	103	94	88	94	89
10 per cent	151	137	136	136	124
20 per cent	176	163	162	161	154
50 per cent	228	232	240	238	225
90 per cent	322	326	345	349	328
Endpoint	390	375	389	389	375
Recovery	98.0	98.0	96.0	97.0	96.0
V. P.	5.5	7.6	10.0	8.2	10.2
Color	red	red	red	C	red

Third Grade

Octane No.	49	55	55	60	
Initial	96	96	88	91	
10 per cent	152	148	134	142	
20 per cent	178	190	176	175	
50 per cent	277	284	265	245	
90 per cent	382	384	370	359	
Endpoint	434	423	414	413	
Recovery	98.0	97.0	98.0	96.5	
V. P.	6.7	7.4	8.6	8.6	
Color	C	27	27	18	

COMPANY L

Regular Grade

	1931	1932	1933	1934	1935
Octane No.	62	67	68	68	70
Initial	95	95	98	100	89
10 per cent	148	145	148	150	133
20 per cent	180	175	177	179	161
50 per cent	266	254	251	250	229
90 per cent	380	374	362	346	322
Endpoint	407	410	426	404	369
Recovery	96.0	96.5	96.5	97.0	96.0
V. P.	7.2	8.8	9 7	9.2	10.6
Color	C	C	C	C	C

Premium Grade

Octane No.	73	76	78	76	77
Initial	97	96	96	90	95
10 per cent	146	140	136	137	134
20 per cent	178	165	160	162	158
50 per cent	248	224	230	224	215
90 per cent	359	332	351	324	315
Endpoint	403	388	432	412	383
Recovery	98.0	96.5	94.0	97.0	96.5
V. P.	6.1	9 5	10.0	9.2	10 0
Color	red	red	red	red	red

Third Grade

Octane No.	48	54	51	52	
Initial	107	102	101	95	
10 per cent	174	160	160	154	
20 per cent	202	190	180	186	
50 per cent	255	260	247	250	
90 per cent	362	361	354	347	
Endpoint	424	440	431	425	
Recovery	98.0	97.5	97.5	97.0	
V. P.	6.6	6.2	6.0	7.0	
Color	C	C	26	20	

New Apparatus and Testing Method Permits Accurate Determination of Gas and Gasoline Content in Field

By L. S. GREGORY
Consulting Engineer, Tulsa.

It is of interest to all natural gasoline and refinery operators to have available an accurate and rapid method for analysis for gas and gasoline. It has been the writer's experience that he has often been handicapped by the inaccuracy of certain analytical methods on one hand and by the tedium and delay of certain methods on the other. The immediate and accurate analysis of a gas or gasoline is often of invaluable aid in locating and correcting operating difficulties or low plant efficiencies.

The present test car provides a mobile and rapid means of analysis. The test car can be sent at slight notice to any point desired and the results of the tests are immediately available after sampling the gas. Furthermore, the test car operator is usually a man familiar with the conditions tested and therefore competent to interpret the results of the tests. Unfortunaely, the present test car method does not yield an accurate test of the gasoline content of the gas and dependence must be placed on a correction figure that may or may not be correct. Also no knowledge is obtained of the percentages of the lighter constituents of the gas. This knowledge is ofttimes absolutely necessary to form a sound opinion of operating conditions and efficiencies. The test car is limited to testing gases and cannot analyze liquids. The analyses of liquid products, raw and finished, are of increasing importance to the refiner and natural gasoline plant operator.

Field Testing

The charcoal test, standard or modified, is adapted to field testing as it is readily portable. It is true that the results are not immediately available, but in most cases the distillation of the charcoal can be completed in the field at a plant laboratory. The charcoal test, as in the case of the test car, does not provide a definite measure of the gasoline content of the gas or its constituents. Again dependence must be placed in a correction factor, the accuracy of which is uncertain. The charcoal test is also limited to the analyses of gases and cannot interpret the composition of liquids.

The laboratory low temperature analytical column analyzes accurately both liquids and gases. Unfortunately, this method, from a practical viewpoint ,is open to several severe criticisms. In most cases a field or plant sample must be shipped to a central laboratory, analyzed, and the results transmitted back to the field or plant for interpretation. The delay incurred from sampling to receipt of the results is ofttimes disastrous to the object of the analysis. In many cases operating conditions and field conditions have so changed that application of the analytical results is impractical and, in some cases, impossible. It is a common experience for an operator to realize on receipt of the analytical results that further or different samples and operating conditions should have been taken to make an intelligent diagnosis of the operating troubles or efficiencies. Frequently the laboratory technician is unfamiliar with field or plant conditions and the field or plant man who took the sample is unfamiliar with laboratory technique. This division of responsibility lessens the opportunity for the fullest benefit being derived from the analytical work.

Need New Method

From the above summary of testing methods it is obvious that there is need of an analytical method combining the mobility, rapidity and simplicity of the test car and charcoal method with the accuracy and completeness of the laboratory low temperature analytical column. It was to meet this need, personally felt by the writer for several years, that the following method was devised. It was decided that the following advantages must be incorporated in one method of test if the contribution to the industry was to be worthwhile:

1. The method must possess the mobility of the test car.
2. The method must be simple.
3. The method should use test equipment already in existence.
4. The method must be accurate.
5. The method must be capable of determining the percentage of lighter constituents as well as the heavier in the sample.
6. The method must be capable of analyzing both gas and gasoline.
7. The method must be reasonably inexpensive.

Several months of actual field experience with the following described method has shown that it does possess all seven advantages enumerated.

The accompanying cut shows the apparatus ready for use. Superficially, it resembles an ordinary test car and does possess the test cars mobility. As manufactured, it is adapted for mounting in present test cars with slight changes. The test car meter and compressor are unchanged. The cooling coils and accumulator are removed and replaced with a specially designed fractionating column. This column is a result of almost a year's experimentation and adaption for test car work. The base of the column is heated by means of an electric resistance coil drawing energy for heating from the car's battery. The top of the column is cooled by a special refrigerant cycle. The refrigerant is supplied by dry ice.

Some question may be raised as to the practicability of dry ice as a refrigerant in field testing. On closer examination it is seen that the use of dry ice is perfectly feasible. Dry ice can now be obtained in 50-pound cakes in numerous towns without difficulty. The apparatus is adapted to take a 50-pound cake and this cake requires no further handling after being placed in the apparatus. The dry ice can be carried throughout the day with slight loss. The special design of the refrigerant cycle permits its use only when needed and without any handling of the dry ice. The operator can therefore load up in the morning with a 50-pound cake and without further trouble or attention run tests until the entire amount is used up. Fifty pounds is usually sufficient for 10 tests.

Method of Procedure

In analyzing gas, the operator of the test car connects to the source of the gas and starts the compressor in the usual manner. The compressor discharges the gas to the column at 250 pounds pressure. The column is maintained at this pressure during the operation of the compressor in the same manner as the pressure is maintained on the present test car accumulator. The gas is discharged from the top of the column through the test car meter. The refrigerated top of the column condenses and returns all constituents of the gas heavier than ethane to the base of the column. The top temperature is indicated by means of a pour test thermometer. After sufficient gas has passed through the column, the compressor is shut down and the heating coil turned on. The column is then operated as a batch fractionatoin column. The ethane is cut overhead at suitable temperatures and pressures and read through the meter. This is repeated for the propane, iso-butane and normal butane fractions. The heating coil is then turned off and the column allowed to cool. The condensate pentane and heavier is withdrawn from the base of the column and measured in a graduate. From the meter readings of the light fractions and actual volume measurement of the pentane plus fraction, the percentages of methane-ethane combined, propane, iso-butane, normal butane, and pentane plus may be calculated. The entire test takes considerably less than one hour's time.

In analyzing gasoline the compressor is not required, as the sample gasoline is introduced into the column under its own pressure. The column is then operated in batch fraction. The light constituents are cut overhead and metered, the heavy fraction is withdrawn and measured, and the various percentages calculated.

Table 1 gives a comparison of gasoline content of a gas analyzed by the low temperature analytical column, and the new test car method hereafter known as Gregory-Modified Test Car Method. It will be seen from inspection of Table 1 that the results closely check those by low temperature analysis.

TABLE 1—COMPARATIVE DATA
(Gallons per 1,000 feet of gas)

Low temperature analytical column		Gregory-Modified test car	
Pentanes plus 35% butane	2.45	Pentanes plus 35% Butane	2.52
gasoline	3.78	gasoline	3.88

Even in cases where low temperature analyses are available it is not possible to predict exactly the amounts of different grades of gasoline that can be made from the gas. This is principally due to the uncertainty of the Engler characteristics of the extracted gasoline. The Gregory-Modified Test Car is designed to furnish sufficient sample to run Engler distillations and vapor pressures. It is therefore possible to stop the fractionation at a proper point, withdraw measure and check a gasoline of any desired grade. As this is indeed convincing evidence of the probable gallonage and grade to be recovered by commercial gasoline, the interested operator has available tangible evidence of the amount and grade of gasoline to be extracted from the gas without resource to uncertain conversion factors.

By this method of testing a rapid check may be made on a stabilizer. Feed, product and residue gas may be sampled, analyzed, and the results interpreted in a short period of time. The stabilizer operator may then make any changes in operation conditions indicated. After the stabilizer has come to the new equilibrium, it may then be again checked to determine whether the new operating conditions are satisfactory. A procedure that may be completed in a day's time, and which is rarely possible with any other method of testing. The test car is then free to move to another location at a considerable distance away if desired.

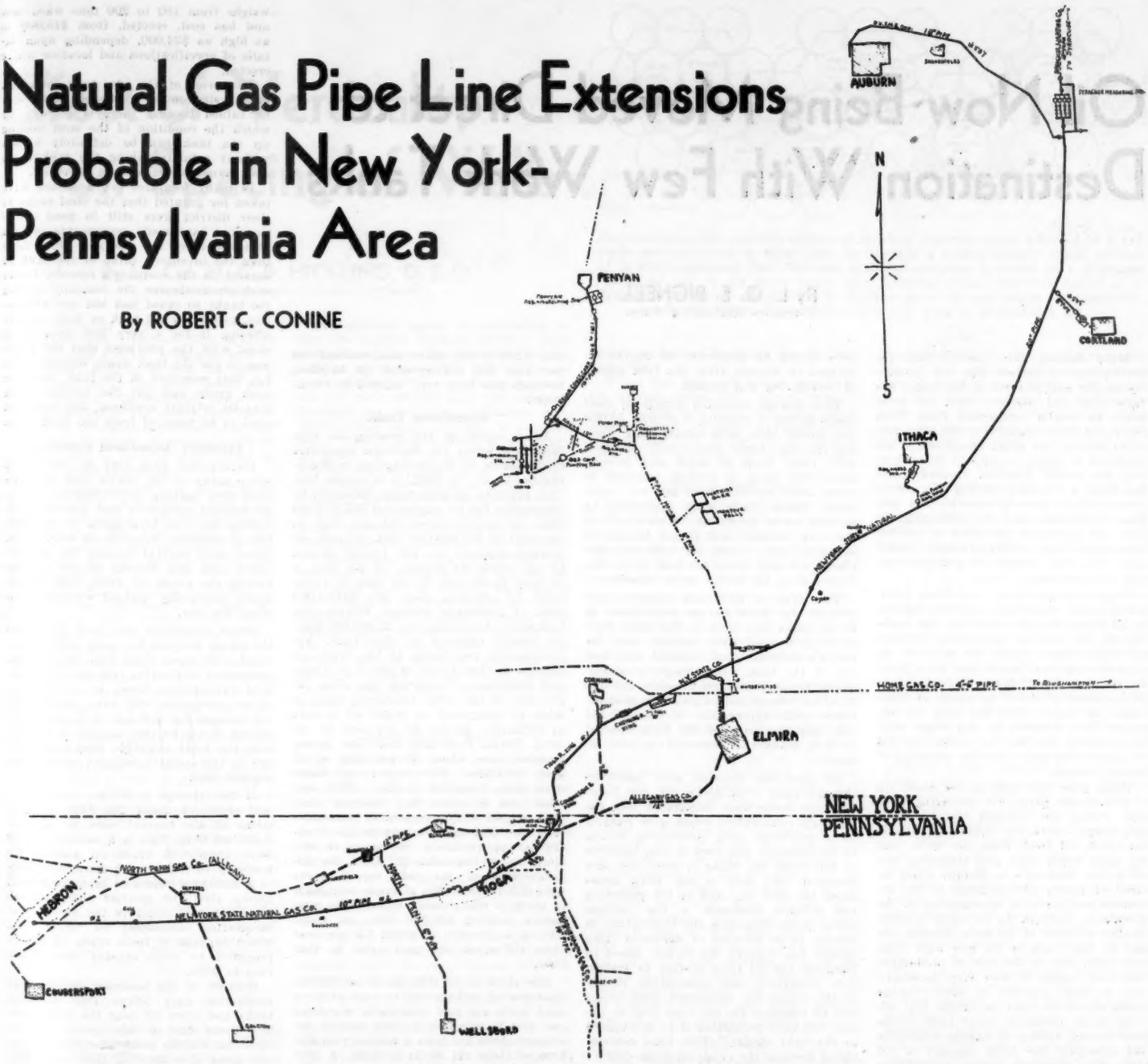
A gasoline plant or vapor recovery plant can be checked at any of several points, liquid or gas as desired, and if necessary an entire plant balance can be made of the plant. Due to the immediate availability of the analyses they can be interpreted with conditions existing at the plant at time of sampling. This is ofttimes impossible after a delay of several days between sampling and receipt of analysis. Practical consideration often requires changes in operating conditions shortly after sampling and, regrettable as it may be, some of these changes are apt to be minimized or forgot with consequent error in application of analytical results when received.

(Continued on Page 45)

View of apparatus included in a standard gas testing car

Natural Gas Pipe Line Extensions Probable in New York-Pennsylvania Area

By ROBERT C. CONINE



WELLSBORO, Pa., Jan. 19.—With large natural gas wells continuing to prove new areas in the Oriskany gas sand belt crossing Pennsylvania into New York State, a substantial increase in pipe line construction activity in this territory appears in prospect during this year. A pickup in industrial activity, naturally, would greatly accelerate expansion of the facilities for transporting the natural gas from this area.

That the possibilities of the Oriskany have not passed their peak is demonstrated by the completion during the past week of a test in Greenwood Township, Steuben County, N. Y., which was gauged at 50,000,000 feet a day, and by large producers which are closing gaps such as that between Genesee and Hebron Fields in Pennsylvania. The Oriskany was first tapped by Belmont Quadrangle Development Co. in March of 1930, in the Wayne-Dundee Field, Schuyler County, N. Y., when a 6,000,000-foot gasser was completed. In September, 1930, Allegany Gas Co. brought in its No. 1 Palmer, on the Sabinsville anticline, gauged at 22,000,000 feet a day.

The fields now proven are the Wayne-Dundee, the Allentown in Allegany County, and the Greenwood in Steuben County, in New York, and the Tioga and Hebron Fields in Pennsylvania. Wells brought in on three widely separated leases in Potter County may develop into new fields.

Before 1931 all of the gas production in Potter County came from shallow wells ranging from 750 feet to 2,400 feet in depth, and the pressures were low, 10 pounds to 600 pounds.

Deeper Wells, Greater Pressure

The Oriskany discovery well in Potter County, Hebron Township, was brought in November, 1931, and gauged 8,000,000 feet with a pressure of 2,100 pounds. The depth was 5,000 feet. In adjoining Tioga County the discovery well was 4,006 feet deep and the pressure 1,665 pounds. In the Moran well in Potter County, where the Oriskany was found at 4,875 feet and production gauged at 8,000,000 feet, the pressure was 1,950 pounds.

In 1930 the only outlet available for the Tioga Field output was a 6-inch pipe line of Allegany Gas Co. which traverses Cowanesque Valley. Susquehanna Gas Co. (North Branch Development Co.) built a 14-inch line from this field to Williamsport and south to Selinsgrove, Pa. New York State Natural Gas Corp., Lycoming, in 1932, completed a 20-inch line to Syracuse, N. Y., from Tioga Field, and in 1933 this line was extended from Tioga Field to Hebron Field in Potter County. The Keuka system of Lycoming south of Penyan was completed in 1932. The latest addition made to the Lycoming (New York State Natural Gas Corp.) is the 10-inch extension from the Syracuse main to Auburn, N. Y., completed in June of 1934.

When the Hebron Field was discovered the only pipe line available was a 6-inch Allegany Gas Co. line, just as in Tioga Field, the year before Empire Gas & Fuel Co. brought a small line into the field from New York State in 1932, and in 1933 the United Natural Gas Co. completed an 8-inch line to connect the field with its gathering system for distribution in the Oil City District.

Extent of the pipe line systems now in operation from these fields may be described as follows: The first line completed by Lycoming Natural Gas Corp., 20-inch, cost $2,500,000. This project extends from Tioga Field north across the state line to Syracuse, where it connects with the Columbia Gas & Electric line from Olean to Newark. The corporation's second project extends 47 miles westward from Tioga Field to the Hobron Field, Allegany Gas Co. was first in these two fields when production was from shallow wells. The Allegany system reaches Elmira, Corning, Mansfield, Wellsboro, Galeton, Coudersport and other points in north central Pennsylvania. Belmont Quadrangle Development Co., operating under an agreement with the Empire Gas & Fuel Co., has a line extending from Hebron Field to Wellsville, N. Y., where it connects with the Empire Co.'s lines to Buffalo and northern cities and towns in New York State. United Natural Gas Co. (Sylvania) has a line to Annin Township, McKean County, where connection is made with the Oil City distribution system.

PIPE LINE CONSTRUCTION

Williams Brothers, Inc., Tulsa pipe line contractors, are now engaged in taking up, cleaning and reconditioning about 12 miles of 6-inch screwed pipe in an old gathering system that is being abandoned by the Texas Co. in the Drumright-Yale district of Oklahoma.

Oil Now Being Moved Direct to Destination With Few Work Tanks

By L. G. E. BIGNELL
Petroleum Engineering Editor

Many factors have entered into the development of modern pipe line systems during the past few years. No longer are lines laid and stations built in great haste to handle production from flush fields and make available to the refineries or to storage the great quantities of oil produced in excess of current demand as was the earlier practice. Instead, there has been a tendency during the period from 1927 to date to renovate old systems, reclaiming and reconditioning oil pipe and laying in the place of smaller lines larger high tensile strength welded pipe lines that permit of greater economy of operation.

These changes have also been influenced by the conditions that have existed in all fields brought about by the limiting of the rate of production through proration orders issued by most of the oil producing state bodies that have jurisdiction over the oil fields. It is true that oil has been produced in excess of those orders in many fields but such oil has seldom been handled by the major pipe line systems therefore its production did not materially enter into the planning of major systems.

These pipe line systems are made up of two major parts, the gathering lines that extend out through the oil fields and connect with the tanks that handle the crude oil fresh from the wells, and the main trunk lines that transport this oil to the terminals in distant cities located at points advantageous to the refineries and points of consumption of the petroleum products. In the older systems smaller volumes of oil were handled per unit of time than in the new high pressure lines, and as the rate of production was also higher it was very necessary that a large number of steel storage tanks should be built to handle this oil.

In many instances large tank farms were erected quickly to handle efficiently and promptly the large amount of oil that was produced under competitive drilling and producing methods and some of this oil has remained in storage for many years after accumulation. This was brought about by several conditions, but perhaps the principal one was that after oil had been stored in the old wooden decked tanks it lost by evaporation or "weathering" the light fractions of the crude and could then be held in storage, almost indefinitely without further deterioration. Only under conditions of high temperature and very low humidity of the air will it give up further fractions.

Fresh Oil Handled First

When a pipe line company had accumulated crude oil in its storage tanks that was weathered so as to be practically staple as to gravity it has been general practice to leave such oil alone and handle fresh oil from well to customer as quickly as possible. This is done regardless of current market price for the crude because the mechanical problem of getting the fresh oil to the refineries as quickly as possible with the least loss of light end fractions was paramount. The pipe line companies were not usually the owners of the oil in transit, therefore their first duty was to their customers and their own oil or oil that may have been stored by producers or buyers remained in storage after the first period of weathering had passed.

This storage consisted largely of steel tanks having a capacity of 30,000, 55,000 and 80,000 bbls., with intermediate sizes, and the older tanks were usually equipped with roofs made of wood and covered with some form of roofing material to make them weather proof but not vapor tight. These roofs were supported by wooden posts, known as "dead wood" to the tank strapper and gauger because it occupied space within the tank that displaced oil and therefore had to be deducted from the tank's gross capacity.

This type of deck and supports was subject to deterioration sometimes at fairly rapid rate and as the light fractions of the oil were carried away by the air currents that traveled into and out of the tank with change in atmospheric temperature and pressure the loss of oil by volume and in gravity was sometimes quite appreciable. A loss of 141 bbls. per day from 15,000 bbls. handled in this manner is reported in one instance.

As pipe line systems were improved the gas tight steel decks and the floating type roofs were introduced into the industry, evaporation losses were reduced to a minimum with consequent saving to the industry and owners and handlers of the crude oil. Many systems are now operated with only a few work tanks along the pipe line and at the gathering and delivery terminals a few storage tanks to accommodate the fluctuation in volume to be handled or delivered. This system has reduced the former losses in handling the oil from station to station very materially and approaches closely to the frequently mentioned ideal objective of handling the oil from well to the still "without permitting it to be exposed to the light of day." This ideal contemplated keeping the crude oil from contact with the air at any point along the line and while it has never been realized 100 per cent the improvement in handling methods has been very marked in recent years.

Superfluous Tanks

In a report of the hearing on pipe lines held before the Rayburn committee of the House of Representatives in Washington, D. C., in 1932, it is stated that "the capacity of steel tanks indicated by incomplete figures aggregated 357,375,056 bbls., or approximately 51 per cent of the total of 705,013,000 bbls. of crude oil storage capacity for the United States. Of the crude oil storage, 82 per cent is at tank farms and 18 per cent at refineries. In addition, there are 10,000,000 bbls. of producers' storage, representing tankage at the wells, and 23,000,000 bbls. of storage capacity in pipe lines. Approximately two-thirds of the crude oil storage in tank farms is found in Texas and Oklahoma; California has about 15 per cent of the total. California leads in what is designated as crude oil storage at refineries, having 48 per cent of the total. Texas, Louisiana and New Jersey together have about 30 per cent of all such facilities." This report was based upon data compiled in May, 1932, and while the situation has changed since with regard to the regions of accumulation, the total steel tankage in this country is approximately the same at this time. As of December 22, 1934, the administrator of the code reports there were 323,736,000 bbls. of crude petroleum in stock in this country reported by companies holding 100,000 bbls. or more. This is a decrease of about 5.5 per cent from the stock one year prior to that time.

The stock of oil fills about one-half of the reported tankage and as some of these steel tanks are now practically worthless and can be eliminated from further inventory there has been a tendency to dispose of these old shells as junk. A new tank of the 55,000-bbl. capacity size weighs from 180 to 200 tons when new and has cost, erected, from $15,000 to as high as $24,000, depending upon details of specifications and location where erected.

The price of the new tank, however, is no criterion by which old tanks can be valued because there is no way by which the condition of the steel making up the tank can be definitely known without actually taking the tank down and examining each sheet carefully.

In many localities tax assessors have taken for granted that the steel tanks in their district were still in good condition and have made assessments so high that the taxes for one year were more than the inventory value of the tank as carried on the company's records. Under such circumstances the company owning the tanks so taxed had but one alternative, to sell the old tank as junk, usually offering it for a very low price as it stood with the provision that the buyer was to cut the tank down, dispose of all b.s. that remained in the tank, level the tank grade and put the location back into its original condition, the reclaimed steel to be removed from the tank farm.

Inventory Adjustment Continues

During the past four or five years while many of the major pipe line systems were making improvements in their mechanical equipment and pipe lines attention has also been given to the problem of reducing inventory in work tanks. There were several reasons for this decision and now several of the systems handle the crude oil from well to customer practically without working tanks along the line.

Other companies use steel storage at the pump stations but each tank is provided with vapor tight deck either of the permanent or floating type and have thus held evaporation losses to a minimum. Other companies still have considerable old tankage for sale and it is being purchased slowly so that in time it is probable the total available steel tank storage in this country will not exceed 500,000,000 bbls.

If this storage is 80 per cent full it will represent about 200 days' stock in terms of the current runs to stills of 2,500,000 bbls. This is 6 months and 20 days' supply of crude oil and as the tendency to reduce tank storage capacity to a minimum seems to be quite general among pipe line systems and crude oil buyers it will result in the necessity of discovering additional oil fields from which supplies of fresh crude oil can be produced to meet current demand for runs to stills.

Because of the tendency during flush production days before 1926 to build tanks and store oil near the wells there is a great deal of this storage now located far off the main pipe line systems and more of a liability than asset. But if the buyers and transporters of crude oil have found that it is no longer profitable to store oil and only a minimum reserve is to be maintained in this country then it will be up to the producer to have his wells in such condition as to permit of daily production of sufficient oil to meet current still runs.

All signs point to a more active drilling campaign for 1935 and the records now available indicate that more than 18,000 completions were made in 1934, an increase of about 50 per cent over 1933 completions. But during the 18-month period, January 1, 1933, to September 1, 1934, only 59 oil pools were opened and the total quantity of oil placed in reserve in those fields was 40 per cent less than the oil produced from other fields and used during the same 18-month period.

With this general condition within the industry of practically balancing demand and supply it remains for the producing companies to continue their exploration work and discover new pools to establish additional reserves, but at all times to produce oil only at the approximate rate of daily still runs with allowances made for time required for transportation and handling of the crude from the fields to the refineries.

Administrator's Report on Crude Stocks

Stocks of domestic and foreign crude petroleum in the custody of companies holding 100,000 bbls. or more totaled 321,624,000 bbls. on January 12. In comparison with data for the previous week, this total represents a net decrease of 549,000 bbls., comprising declines of 413,000 and 136,000 bbls., respectively, in stocks of domestic and foreign crude oil.

In accordance with the practice of producing at the maximum during the first half of the month, crude oil production increased from a daily average of about 2,424,000 bbls. for the week ended January 5 to about 2,580,000 bbls. for the week ended January 12. Daily average imports declined to 31,000 bbls., the lowest weekly average since the adoption of the code. Daily average crude runs to stills were about 2,525,000 bbls., an increase of 75,000 bbls. over the average of the previous week. The estimated daily average balance of crude oil for the week ended January 12 was as follows (barrels): Production, 2,580,000; imports, 31,000; decrease in stocks, 78,000, equals runs to stills, 2,525,000; exports, fuel, and losses, 164,000.

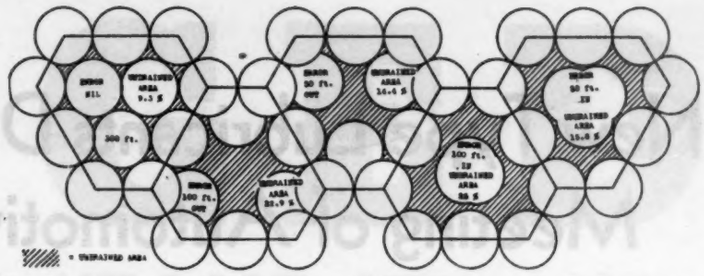
STOCKS OF CRUDE PETROLEUM, JANUARY 5 AND JANUARY 12, 1935

(Barrels of 42 gallons)

Grade of crude oil—	Jan. 5	Jan. 12
Pennsylvania Grade	4,470,000	4,536,000
Other Appalachian	983,000	985,000
Lima-N.E. Indiana-Michigan	1,165,000	1,147,000
Illinois-S.W. Indiana	11,411,000	11,488,000
N. Louisiana and Arkansas	9,797,000	9,625,000
West Texas and S.E. New Mexico	30,252,000	30,502,000
East Texas	29,808,000	29,678,000
Other Mid-Continent	149,747,000	149,433,000
Gulf Coast	18,610,000	18,613,000
Rocky Mountain	27,442,000	27,540,000
California	35,145,000	34,776,000
Domestic crude	318,736,000	318,323,000
Foreign crude	3,437,000	3,301,000
Total*	322,173,000	321,624,000

*Represents approximately 98 per cent of total stocks in the United States, exclusive of producers' stocks.

Effect of Verticality on Spacing of Wells



Demonstrates the possible effect of drilling error in areas where 3 of 6 1/2 wells are deflected to what may be deemed a comparatively small extent. It is not suggested that 300-foot spacing connotes a belief in a drainage radius of 150 ft. In most cases such spacing would indicate belief in a drainage radius of 160-170 ft. if drilling error is not taken into account. At the latter figure the undrained area is practically nil

By Lt.-Col. H. C. B. HICKLING, D. S. O
General Manager, Apex (Trinidad) Oilfields*

The verticality of wells is now receiving considerable attention. The benefits obtained from and the principles governing straight drilling, as also the instruments required in the local fields, warrant discussion. In obtaining verticality in wells drilled by the rotary, one factor exceeds all others in importance and that factor it is desirable to stress. It will be accepted that a vertical well should be the aim of all concerned.

The benefits are obvious: (a) Reduced wear and stress on equipment, both drilling and production; (b) elimination of the necessity for more than a few oriented surveys; and (c) plans for economic drainage can be carried out and at minimum cost.

These headings could be subdivided indefinitely, but all benefits fall into one of the three and, through them, affect the ultimate aim—maximum profit. They are all self-evident, but (c) is by far the most important, for how can a field be drained commercially or effectively if the drainage foci cannot be placed at the required points? Well spacing and profit vary inversely with the drilling error.

The Trinidad drilling regulations postulate 300-foot spacing and, although it is admitted that an argument on the subject might extend indefinitely, yet it may be accepted as a reasonable average spacing. The equivalent of a 50-foot departure expressed as an average deflection, and also the average deflection in neighboring wells at 300-foot spacing, which may give complete coincidence of drainage areas, are shown hereunder:

Depth in feet—	50-foot departure—approximate average deflection	Average deflection which may cause coincidence
1,000	2°	8½°
2,000	1½°	4¼°
3,000	1°	3°
4,000	¾°	2¼°
5,000	3/5°	1¾°

With closer spacing accuracy is more valuable, for where a departure of 150 feet in two neighboring wells may give complete coincidence with 300-foot spacing, with 150-foot spacing 75 feet of departure effects the same result.

Therefore, the need for and the value of accuracy increase both with depth and close spacing; unfortunately, the difficulty of obtaining accuracy increases with depth.

When the known results of surveys are considered in conjunction with the above figures, it will be realized how enormously important verticality becomes. For, at quite normal depths, a well with an average deflection of 3 degrees may become a total loss on account of coincidence of drainage acres.

Undrained Areas

The accompanying figure shows the possible increase in undrained area due to departures of 50 feet and 100 feet in three neighboring wells, when 300-foot spacing is adopted and 150-foot drainage presumed.

It is suggested that 50 feet should be accepted as the maximum acceptable departure when 300-foot spacing is adopted. To express the acceptable departure in degrees alone or in degrees in terms of drainage areas is entirely illogical.

The greatest enemy to verticality is fast (as regards footage) drilling with excessive weight on the bit which, for the sake of brevity, will be referred to as "uncontrolled." The one justifiable reason for such drilling does not exist in Trinidad, for the boring regulations prohibit drilling within 150 feet of a boundary. This eliminates town lot scrambles in which it is admitted uncontrolled drilling may be necessary, as the chance of obtaining the cream of a pool may outweigh the benefits resultant from vertical wells. In addition to the regulation, many operators have agreements with their neighbors governing offset drilling.

Approximately 10 per cent of the driller's time is spent on drilling, the remainder being spent on moving rig, rigging up, running in and out, repairs, etc. Furthermore, direct drilling charges (the amount spent on the above plus derrick cost) are only some 40 per cent of total drilling charges when all fields cost are allocated either to feet drilled and/or barrels produced, as in final costing they should be.

Haste Makes Waste

It is, thefefore, futile to attempt to reduce costs by increasing drilling speed, when it is considered that drilling speed affects some 4 per cent of total costs only, and that during drilling time there is the greatest possible opportunity for increased speed to effect harm. (See Appendix "A" and note thereon.)

Moreover, any benefit obtained by increased speed is more than offset in other directions. One extra fishing job may more than outweigh the speed advantage gained by the uncontrolled drilling of many wells. That uncontrolled drilling makes for more fishing jobs will probably be accepted by everybody.

In practice the vertical is a seldom attained target and most operators would be satisfied if the limit of 50 feet suggested previously was not exceeded. In the Fyzabad area an average deflection of 1½° is attainable and can certainly be improved upon, and this includes a proportion of wells to 4,000 and 5,000 feet. An average of 1° has been obtained during the past six months. Little difficulty is found in keeping wells close to the vertical down to 1,500 feet, but the difficulty increases thereafter.

In drilling vertical wells reliance has to be placed on gravity—in a few cases guides can be used, but the clearest distinction must be kept between gravity drilling and guided drilling, as confusion leads to mistakes in practice. The driller has plenty of enemies, but gravity is his one consistent friend if it be given a chance to function as such. In gravity drilling the weight on the bit should be the least possible consistent with reasonable speed, and it should be concentrated close to the cutting edge, thereby lowering the neutral point as far as possible. By neutral point is meant the point at which the drill pipe passes from a state of tension to one of compression. Below the neutral point the drill pipe or stem should be rigid, but above that point it may be as flexible and as small as is consistent with the load to be supported, the power it has to convey and the fluid it has to pass. Provided that these points are taken care of, definite benefit is derived from the use of small drill pipe.

When bits and drill collars are light, the neutral point will occasionally be high in the drill pipe, and this, being comparatively flexible, is more likely to bend and lean to one side of the hole, creating a tendency to start a deviation.

Weighted Drill Pipe

When bits and drill collars are heavy enough no drill pipe is in compression and this cause of deflection is eliminated. Such a string, when lightly fed, will always have an inherent tendency to revert to the vertical.

In scores of instances wells showing a slight tendency to deviate have been brought back toward the vertical by drilling without weight on the bit, or rather a weight so small that the indicator does not record it.

The value of the horizontal component tending to bring the bit back to the vertical whenever it is deflected is much increased if the weight be concentrated as close to the cutting edge as possible.

To make the best use of this horizontal force when correcting a deflection, the parallel portion of the blade of bits should be reduced to a minimum.

The percentage of footage that can be made in local fields with practically no weight on the bit is remarkable.

The weight on the bit being all important, a weight indicator is of the greatest assistance when drilling with manual control. The cost of the best modern type is only some £60 to £70, and no rotary rig is complete without one. The best and simplest form is that in which the tendency of the wire line to straighten under the load is used to compress a fluid and thus obtain a reading on a pressure gauge.

More Bits

The driller who aims at verticality must be prepared to use more bits per foot than the one who merely wishes to make hole. In sandy formation this is easily understood, more especially by anyone who has used and dressed a grindstone in the old-fashioned method.

When "shells" are encountered more weight may be necessary, but deviation on shells should be anticipated and looked for, and, as far as possible, immediately corrected. As a general rule, however, any attempt to "crowd" or obtain increased footage by "pouring it to her" is foolish.

Patented bits recently introduced have given very promising results. A comparative test on one type was not conclusive, but the results were promising and showed that such bits can retain verticality under greater weight than the fish-tail and make more speed in certain conditions.

A three-point reamer is a convenient aid towards concentrating the required weight as close to the bit as possible and has given good results in keeping the holes to gauge; owing to its form it does not obstruct the flow of the drilling mud unduly.

It is suggested that in some cases such reamers should be carried in the drill pipe string several hundred feet above the bit, in such a position that the weight below tends to straighten out the string and forces the reamer to work on the apices of any angles caused by deviation. Three-point reamers are also useful as preventing any tendency to weaving in the drill pipe.

After Coring

The greatest care should be taken during and after coring to watch for deflection, as the weight is not then usually concentrated close to the bit. Heavier core barrels than those normally used are required.

In a few cases conditions are such that guiding of the bit is possible, but, as has been said before, such drilling is entirely distinct from gravity drilling.

When spudding-in guiding is possible. In practice this has been tried but found unnecessary with drill collars weighing 2,000 pounds or more. It can also be used to center any rat-hole when such has to be started at the bottom of a hole known to be vertical. The only other occasion on which a guide can be used is when a hole, known to be vertical within acceptable limits, suddenly deflects. In such cases the hole above the deflection can be used as a guide. In so doing, a lace joint must be used of the largest size casing that will allow of circulation; using this, the hole is redrilled, with practically no weight until it is felt that a shoulder has been obtained and new hole is being drilled. Using the normal clearances at least 60 feet of lace joint is required to cut out a sudden deflection of 2°; smaller deflections are more difficult. The use of a lace joint adds to fishing risks, yet it remains the best method of correcting a sudden deflection.

The quesiton as to when to attempt straightening is important. A well that shows a gradually increasing drift is the most difficult to tackle. In some cases one can only hope for a soft patch when fast rotation with practically no weight on the bit may commence a cure.

Rat-holing has been condemned as an enemy of verticality, but in some cases of gradual deflection, partial cure has been effected by reaming the hole at the bittom to the largest size possible and then rat-holing with some light drill pipe. The reaming allows the smaller drill pipe to hang more vertically, and if the rat-hole shows improvement it can be reamed out to full size. Experiments will shortly be carried out with an underreamer which should give opportunity for a still larger correction being obtained.

Surveying Necessary

To obtain the earliest possible warning of the commencement of deflection, a survey is necessary; if the well is vertical a survey is not required. Therefore, the prime necessity is an instrument which will give early warning of deflection, and, if use is made of that warning and reasonably vertical wells obtained, any more complicated form of instrument is unnecessary.

In certain cases excessive deflection cannot be avoided, and in such cases oriented surveys may be necessary to

(Continued on Page 39)

*Paper read to Trinidad branch of the Institute of Petroleum Technologists.

New Type Lubricants Discussed at Meeting of Automotive Engineers

By SPECIAL CORRESPONDENT

DETROIT, Jan. 19.—More than 2,000 members and guests of the Society of Automotive Engineers attended the annual meeting of that society which was concluded here today after five days of almost continuous sessions. It was the largest and best attended meeting ever held by the society and found the petroleum industry well represented through its technologists and engineers. Several sessions were devoted to fuels and lubricants or to closely related matters of interest to the oil industry and many representatives of that industry took a prominent part in presenting and discussing fuel and lubricant subjects.

This meeting marked the conclusion of the term of A. Ludlow Clayden, Sun Oil Co., as the society's vice president, representing Fuels and Lubricants Engineering. He is succeeded in this office by Daniel P. Barnard, Assistant Director of Research, Standard Oil Co., Whiting, Ind., who was present and presided during a part of one session. Thomas A. Boyd, General Motors Corp., Harry F. Huf, Atlantic Refining Co., and C. M. Larson, Sinclair Refining Co. were elected members of the Nominating Committee to nominate a successor to Dr. Barnard for 1936. Dr. Raymond Haskel, Texas Co., and John R. MacGregor, Standard Oil Co. of California, were named alternates on the same committee.

Bearing Corrosion

Perhaps the most important and best attended session from the standpoint of the petroleum technologist was that of yesterday devoted to a conference on oiliness of crankcase oils and lubrication of copper-lead bearings. This subject, which involves, of course, the use of compounded oils, and is of great interest to oil men as well as to automotive engineers and those concerned with the operation of automotive equipment. The subject is still highly controversial and a great deal remains to be done to determine what place compounded oils will assume in automotive engine lubrication. Today's session on fuels and lubricants was not so well attended, but was of considerable importance. Uniontown Hill tests on fuels were discussed, largely from an engine angle, and worm gear lubricants were also considered.

Tuesday's aircraft session brought out certain problems relating to oil and fuel as affecting aircraft performance. The paper by S. D. Herron of the Ethyl Gasoline Corp., entitled "Aircraft and Aircraft Engine Performance as Influenced by Engine Oil" was based on data secured by the Army Air Corps. It pointed out that, by using oils produced by new refining methods, the permissible temperature of oil entering the engine can be raised with resultant decrease in the sized and drag produced by oil coolers. Piston cooling in modern high-output engines is largely dependent on oil splash and with improved oil it may be possible both to increase oil cooling and also to reduce oil cooler size, the author declared. There is considerable variation in the stability of aircraft engine oils, but no method except tests on the block or in service will more than approximately predict engine behavior when operating on an unknown oil.

It was the author's opinion that no aircraft engine oil specifications defines products of uniform stability, especially as regards piston-ring sticking, since no proposed stability test has yet been proved to completely predict stability. It appears possible, the author continued, that compounded oils may be extensively used for aircraft engines in the future, in which event the need for test methods which will predict stability will become still greater than it is with purely mineral oils. Most modern aircooled or high-temperature liquid-cooled engines of high specific output are more severe upon oil than were earlier aircooled engines, despite great improvements in cooling, and thus derive greater benefits from increase in oil stability.

Squadron Leader A. Ferris of the Royal Canadian Air Force dealt with the winter operation of aircraft engines in Canadian service, showing among other things, how difficult it is to start engines in low temperatures. He indicated that the use of low-viscosity oils had proved helpful and said there will doubtless soon be available a 53-second oil with a remarkably good viscosity index. Discussors, including several engineers with aircraft engine companies, warned that the use of low-viscosity oils is likely to increase engine wear, but the author indicated that trouble on this score had not been encountered, although experience with engines of high specific output is lacking in his service. He indicated, however, that corrosion which occurs after the engines stop is responsible for most engine wear.

Difficulties in starting are sometimes caused by sticking valves, probably partly as a result of the effect of low temperatures on lubricants. Lubrication by oil under pressure may help to overcome this, it was pointed out. Dr. H. C. Dickinson of the Bureau of Standards indicated that it should not prove difficult to produce a gasoline which would be sufficiently volatile at -40°F. to facilitate starting but that such a fuel might give trouble from vapor lock at the temperatures attained after the engine is warmed in operation.

Detonation Tests

Arthur Nutt, chairman of the CFR Aviation Gasoline Detonation Subcommittee, made a progress report on the test program which this committee has in hand. He gave particulars about the progress of the tests, which he said are about 85 per cent completed, but did not report results. It is expected that the tests will be completed in time to give an analysis of the results secured at the time of the summer meeting of the society. The author noted that the Navy Department is now specifying ratings by the CFR method for current procurement of aviation gasoline and said that it is understood that the results of the tests will be given consideration by various European governments if they are conclusive enough to warrant adoption of the CFR motor method or some modification thereof.

T. B. Rendel of the Shell Petroleum Corp. and chairman of Volunteer Group for Compression Ignition Fuel Research, made a progress report at the Wednesday afternoon Diesel Session. This group was formed in 1933 to carry on some co-operative research on the ignition quality of Diesel engine fuels and includes representatives from some 10 refining companies as well as some automotive engineers. Mr. Rendel reported that tests with a modified C.F.R. engine did not give entirely satisfactory results, hence a new special Diesel head with means for varying the compression ratio was designed. The report included drawings of this head and certain supplementary apparatus including an indicating device and a bouncing pin. About 10 of the new engines are now in use in the laboratories of members of the Volunteer Group and a tentative program for their use has been laid out. The group has begun a program having as its objective the perfecting of a method for measuring ignition quality of Diesel fuel which may later be submitted to the American Society for Testing Materials as a standard method.

Experimental work in contemplation includes perfecting the test engine and testing technique, providing some suitable scale for expressing ignition quality, determination of the effect of various engine factors on the relative rating of different fuels, consideration of other physical and chemical methods of rating, and finally field testing and correlation of service results with laboratory tests. Already a fair amount of work has been accomplished under the first two of these headings. A few minor difficulties have been encountered, but no major difficulties appear to be in sight. About 18 months' of tests with the engine in the Shell laboratory has shown that the delay method of testing is not so rapid as the method of employing the critical compression ratio, but is somewhat more accurate. Two standard fuels used for comparisons and which seem to be most widely used at present are cetene, shortly to be made available by duPont deNemours & Co. and alpha methylnaphthalene, obtained from the Railly Chemical Co.

Discussion of this report dealt more with the need for Diesel fuels standards than with the report itself. In general, it appeared that Diesel engine manufacturers desire rather rigid specifications. Dr. A. E. Becker of the Standard Oil Development Corp., said that, as the compression ratio of Diesel engines is raised, the range of fuels available widens, which is the reverse of the condition in gasoline engines. Ignition quality, he indicated, is believed to have an effect on smoothness of operation, but this and other factors will need much checking with field experience. C. M. Larson, Sinclair Refining Co., spoke of troubles already encountered in distribution of Diesel fuels with the increasing use of Diesel engines in road building. He expressed the view that two types of Diesel fuel will be required, one for low-speed engines and another for the higher speed types. There may be, he said, some tendency to adopt furnace oil and make it available for Diesel use.

Compounded Oils

A great deal of interest centered in Thursday's "Fuel and Lubricants" session in which the use of compounded oils and their effect on engines was considered. Because of the preliminary nature of the reports made and the fact that there is a great difference of opinion about, and a lack of sufficient exact data on, the performance of compounded oils, only verbal abstracts of the reports were made and the reports themselves were not distributed or made available for publication. Dr. G. M. Maverick, Standard Oil Development Co., and H. C. Mougey, General Motors Corp., reported respectively on the effects on engine wear and general features of operation and on the effects (of compounded oils) on metal bearings. Both reports were based in part, at least, on questionnaires and brought out, among other points, the following:

Await Conclusive Data

Some automotive concerns have seen no advantage gained with compounded oils, but still await more conclusive data. Oil company engineers are divided, but many feel that improved oiliness is reflected in improved engine lubrication. Others are doubtful. One aviation concern reported very favorably on the performance of compounded oils when operated under extreme test conditions. No corrosion of bearings was observed and greatly increased bearing life was secured. Makers of lubricant-specialty products consider that they have evidence of improvement in service but did not present data obtained under controlled conditions and gave few data relating to use with the newer bearings materials. There is divided opinion as to effects on engines, aside from effects on bearings, though there is greatest agreement as to the need of compounded oils in running in new engines. Some evidence indicates decreased engine wear and some longer bearing life providing corrosive effects do not enter.

H. C. Mougey, General Motors Research Corp., showed several slides and made certain comments on the effects of compounded lubricants on engine bearings and also gave certain facts brought out by a questionnaire prepared on behalf of certain S.A.E. groups. Some of the points made indicated: That addition agents for admixture with engine crankcase oils and compounded oils are now being marketed in commercial quantities. Some compounded oils and addition agents are believed to have no harmful corrosive effects on copper-lead and other new types of engine bearings. Other compounded oils and addition agents are known to have a very detrimental and destructive effect on certain types of bearings. In laboratory test machines certain compounded oils reduce friction in bearings but no conclusive data have been presented to show reduced friction in engines. Commercial bearing alloys used in current production automotive engines operate satisfactorily with straight mineral oils and do not at present require the use of compounded oils or addition agents. It was pointed out that if compounded oils are used, the non-injurious types should be selected. It is hoped that laboratory tests will eliminate a large percentage of lubricants that are corrosive to bearings, so that engine testing can be minimized, but at present laboratory tests cannot be used to predict with certainty satisfactory performance in service.

Danger of Corrosion

There was much discussion tending to confirm the foregoing remarks and to indicate that widely varying results are secured with different compounded oils as well as with the same oil in different engines or in the same engine under different operating conditions. Some oils are very sensitive to small change in temperature and may become highly corrosive if a certain critical temperature is exceeded. In some instances bearings of certain types, including the copper-lead form are very seriously corroded by acid formation in compounded oils. On the other hand, the discussion indicated that a proper compounding may be very beneficial, especially when the oil attains temperatures at which its viscosity becomes very low. Rapid bearing wear has occurred in some engines with compounded oils under conditions in

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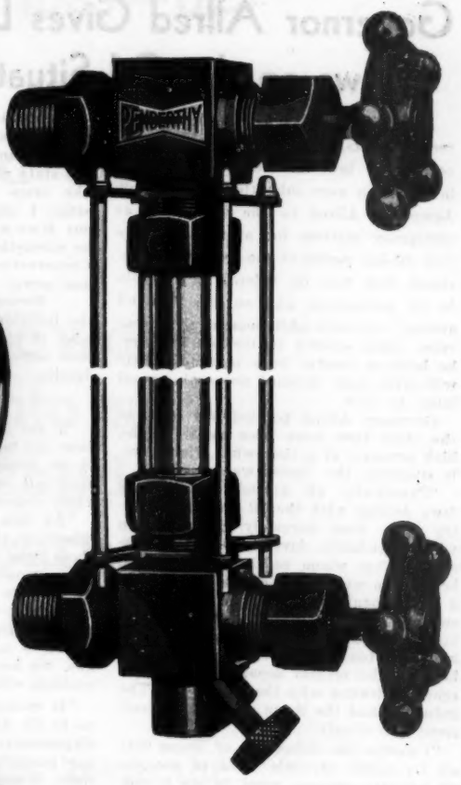

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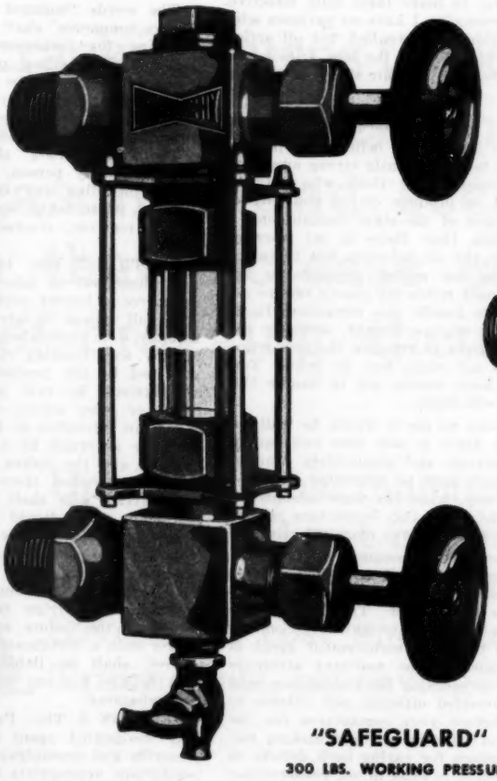

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which standard mineral oils have proved very satisfactory.

This afternoon's fuel and lubricants session received a very important and thorough report on a long research into the lubrication requirements of worm gearing on the part of the Socony-Vacuum Corp. This was presented by Dr. C. H. Schlesman who was highly commended for the research work involved. Several oils were tested and very full data on the results secured were reported.

Prof. H. W. Best of Yale University presented the report of the Co-operative Research Committee on the 1934 road tests made chiefly on Uniontown Hill. This report was based on the same data presented in another report at a recent A.P.I. meeting but treated the facts more from an engine standpoint whereas the earlier report dealt with them largely from a fuel standpoint. As the report includes some 40 pages of text, tables and graphs, it is impossible to give an adequate summary in a brief news report. Those interested, however, will undoubtedly be able to secure a copy through the Co-operative Fuel Research Committee. Still further data were added in lengthy prepared discussions some of which include other and later tabular and graphical summaries. Donald Brooks of the Bureau of Standards, presented the most comprehensive discussion and this has not yet been released for publication.

Governor Allred Gives Legislature His Views on the Oil Situation in Texas

AUSTIN, Tex., Jan. 21.—Relief and recovery acts, oil, utility, lobby and tax regulation, law enforcement and labor law revision were submitted by Governor James V. Allred to the legislature as emergency matters for attention in the first 30-day period of the session. He declared new war on federal dictatorship in oil production, and on the "hot oil artists," and said while none of the oftencited chaos existed in the oil industry, he believes present laws inadequate. He will offer more detailed proposals on oil later, he said.

Governor Allred pointed out most of the state laws have been passed under high pressure at a time when, figuratively speaking, the "house was on fire."

"Practically all amendments to the laws dealing with the oil and gas industry have been hurriedly passed, often while legislative investigations of officers against whom reckless charges had been made were being carried on, and at a time when feeling was high. As a result of these conditions, and failure to keep in mind the proper objective, we have had too little of co-operative effort between the several departments of government dealing with these problems. The industry, and the State as well, has suffered accordingly.

"I assure the citizenship of Texas that all its public officials want to see the oil industry prosper, want to see it continue as an industry in which the profit motive and opportunity may still exist, but want it administered at all times with due regard to the rights of the consuming public.

Prospect Good

"Recently there have been premonitions and predictions of profound change in opinion as to policy and procedure. We have heard modified rumblings of criticisms similar to those of the past four years. Upon the whole, the prospect ahead for the oil industry is good. Conditions have steadily improved, notwithstanding the recent decision of the U. S. Supreme Court striking down Section 9(c) of the National Recovery Act. Since that decision, there are those who say the State is powerless, under its present laws, to deal with petroleum and its products in interstate commerce.

"While I am personally in favor of a re-enactment of Section 9(c) of the industrial recovery act, to meet constitutional objections and enable the federal Government to operate in its constitutional domain (that is, regulation of shipments of illegal oil in interstate or foreign commerce), yet I am firmly of the opinion that the State and the State alone has the power to deal with the production of oil within the State. I am still in agreement with the state Democratic platform opposing the 'abdication or surrender of the State's power to control the production of its natural resources,' and likewise oppose 'any federal encroachment upon the exclusive power of the State to control the production of oil and gas.'

"Believing as I do that the state and the state alone has this power, and that the state can adequately control the same, I am also of the opinion that if our laws are not adequate, they should be strengthened so as to give the state Conservation Commission sufficient means and power to make them fully effective. . . . Personally, I have no patience with the individual or so-called 'hot oil artist' who, in violation of the law, tries to secure more than his fair share of oil production.

Laws Inadequate

"I am inclined to believe the present laws are not sufficiently strong adequately to punish either those who outright steal oil or produce oil in violation of valid orders of the state commission.

"At this time there is no so-called 'chaos' in the oil industry, but there are those who for selfish purposes or for power would relish the state's failure adequately to handle this situation. In no event will we, as Texans, abdicate our exclusive right to regulate the production of oil in our state, but, as honest Texans, we have simply got to handle this problem efficiently.

"It seems to me it would be well for us to sit down at this time and sanely, dispassionately and temperately examine our present laws to determine their defects, if any, what the state commission needs, and what this legislature can do to make state control more effective.

"I therefore recommend: That the proper committees of each house begin an immediate study of our present laws with this end in view. That you ask the chairman of the State Railroad Commission and the chief enforcement agent of the commission, the assistant attorneys general representing the commission, and other interested officials and citizens to appear before your committees for the purpose of pointing out and making recommendations for curing such defects as may be found to exist in our conservation laws.

"Later on I may have some specific suggestions to make to you myself; but, in the meantime, I suggest that among other things the committees' study be directed toward the following questions:

"1. Are our present state laws sufficient to enable the state commission adequately to deal with the regulation and production of oil and gas to effectuate real conservation.

"2. Are the penalties now provided by law sufficient to deter law violations.

"3. Has the state commission really been given a sufficient appropriation to employ a sufficient force of efficient, intelligent men to really discharge the duties the law has imposed upon the commission.

"4. Has the attorney general really been given sufficient appropriation to enable him to employ sufficient capable assistants to properly represent the commission."

Revised Connally-Gore Amendment Is Reported by the Senate Committee

To regulate interstate and foreign commerce in petroleum and its products by prohibiting a shipment in such commerce of petroleum and its products produced in violation of state law, and for other purposes.

Be it enacted by the Senate and the House of Representatives of the United States in Congress assembled. That it is hereby declared to be the policy of Congress to protect interstate and foreign commerce from the diversion and obstruction of and the burden and harmful effect upon such commerce caused by contraband oil as herein defined to cooperate with the several states, or any of them in their efforts to conserve deposits of crude oil situated within the public domain. That for the purpose of this act the words "contraband oil" (hot oil) shall be construed to mean crude petroleum and the liquid products and blends of crude petroleum any part of which was produced, refined, processed, transported, withdrawn from storage, or otherwise handled in violation of any state law or valid orders, rules, or regulations, prescribed thereunder, and the liquid products of such crude petroleum or petroleum products, derivatives, or blends.

The words "engaged in interstate or foreign commerce" shall include shipping, receiving for transportation, transporting, receiving, selling, purchasing, or offering or causing to be shipped, received for transportation, transported, received, sold, or purchased in or in the course of interstate or foreign commerce.

The word "person" shall be construed to include any person, natural or artificial, including any corporation, association, partnership, executor, administrator, receiver, trustee, agent, or employe.

SECTION 2. The transportation of contraband oil in interstate or foreign commerce is hereby prohibited. No person shall engage in interstate or foreign commerce in contraband oil. Without in any way limiting classes of persons governed by the provisions of this Act all carriers, by rail, pipe line, water, truck, or other means of transport who engage in interstate or foreign commerce shall be governed by the provisions of this act and the orders, rules and regulations, prescribed thereunder. No common carrier who shall refuse to accept petroleum or its liquid products, derivatives or blends, in any area in which, from time to time, certificates of clearance may be required by the orders, rules, and, or regulations issued hereunder, for interstate or foreign transportation by reason of the failure of the shipper to deliver such a certificate to such common carrier, shall be liable on account of such failure for any penalties or damages whatever.

SECTION 3. The President or his duly designated agent or agency shall prescribe and promulgate such rules and regulations appropriate to effectuate the purposes of this Act, including but not limited to suitable rules and regulations prescribed by any duly constituted state authority and may require reports, maps, affidavits and other documents relating to the production, refining, processing, transporting, or handling of petroleum or liquid petroleum products, derivatives and blends and he may provide for inspection of properties and facilities, and may require books and records to be kept available for inspection. The President or his duly designated agent or agency may require certificates of clearance for petroleum and liquid petroleum products, derivatives and blends moving or intended to be moved in interstate or foreign commerce in areas where it may be found necessary or appropriate to effectuate the purposes of this Act; and the President or his duly designated agent or agency may establish boards for any such area or areas to issue certificates of clearance. Such board or boards, under rules and regulations prescribed and promulgated by the President or his duly designated agent or agency, shall, upon application duly presented make independent determinations of fact whether the petroleum and liquid petroleum products, derivatives, or blends for which a certificate is applied do or do not constitute contraband oil. The members of any board authorized by the provisions of this section shall have the power to administer oaths or affirmations. Whenever such certificates of clearance are required in any area or areas no person shall engage in interstate or foreign commerce in petroleum or liquid petroleum products, derivatives or blends from such area or areas without first obtaining such certificates of clearance in accordance with the applicable rules and regulations.

SECTION 4a. Any person violating any provision of this act or of any valid order, rule, or regulation prescribed thereunder shall be deemed guilty of a crime, and, upon conviction, shall be punished by a fine of not to exceed $5,000.00, or by imprisonment of not to exceed 6 months, or both, and each act or omission in violation thereof and each day of any such act or omission shall constitute a separate offense. PROVIDED THAT upon the second or any subsequent conviction thereunder, such person, if an individual, shall be imprisoned as herein provided.

SECTION 4b. The several district courts of the United States are hereby invested with jurisdiction to prevent and restrain violations of this Act or of any order, rule, or regulation prescribed thereunder and suits may be brought in any district wherein the defendant is a resident or is doing business. If any person fails or neglects to obey any provision of this Act or order, rule, or regulation prescribed and promulgated thereunder, the President or his duly designated agent or agency may apply to an appropriate District Court of the United States for the enforcement of such provision of this Act or order, rule, or regulation. The court shall enforce obedience of this Act or such order, rule, or regulation by a writ of injunction or other process mandatory or otherwise.

SECTION 4c. It shall be the duty of the President or his duly designated agent or agency or the several District Attorneys of the United States to bring or cause to be instituted such action at law or in equity in the name of the United States as may be necessary for the enforcement of the provisions of this Act.

SECTION 5. Any person adversely affected by any order, rule, or regulation prescribed and promulgated under the provisions of this Act or by any act done or proposed thereunder and who has exhausted all his administrative remedies prescribed by this Act or any rules or regulations prescribed and promulgated thereunder may seek court review by suit for injunction in any appropriate District Court of the United States. Such suit shall be tried in accordance with general equity principles.

SECTION 6. The President may delegate any of his functions and powers under this Act to such officers, agents, and employees as he may designate or appoint and is authorized to co-operate with any state official or state agency in relation thereto.

SECTION 7. If any provision of this Act or any clause, sentence, or part hereof be held unconstitutional or invalid for any reason, or the applicability thereof to any person, circumstance, commodity, or class of transactions with respect to any commodity be held invalid, the validity of the remainder of the Act and the applicability of such provisions to other persons, circumstances, commodities, and classes of transportation shall not be affected thereby.

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They suck the lifeblood out of profitable operations

Dubbscracking turns these worthless by-product weasels into anti-knock gasoline and secondary products that increase earnings instead of dragging them down

Universal liquid inhibitor keeps the gumbugs all out of your cracked gasoline and the octane rating all in
Saves acid cost and treating losses
Trifling cost, big saving

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
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The Immediate Point

The Connally-Gore substitute for section 9(c) of the National Recovery Act, as revised and reported by the Senate Committee on Mines and Mining, seems to provide every specification found wanting in the original section by the Supreme Court.

It supplies a legal definition of "hot" oil which is declared to be "contraband oil" produced in violation of state laws and regulations. It definitely authorizes the President to issue specific regulations and delegate his powers to put them into operation, through certificates, records and tender boards.

It provides for enforcement through the routine processes of the courts and for redress, if necessary, through the same channel. The penalty clause has not been omitted.

A similar bill is to be introduced in the House, so that as little time as possible may be lost before enactment. Action in the Senate seems reasonably assured. This, unfortunately, is not so clear about the House, judging by reports from that chamber.

The report of the Cole committee, the House committee which really studied the oil situation, should, however, have deciding weight. Any bill reported by the House committee on Interstate and Foreign Commerce, of which the Cole committee was a subcommittee, will no doubt reflect the Cole findings.

Representative Pettengill's fears that Federal enforcement in interstate transportation of state regulations might be unconstitutional, might subordinate Federal authority to the decision of the states, may safely be left to the Supreme Court. The only way to obtain a decision on that point is to enact the bill and have it tested.

Fear that Congress may put the Federal government in the position of ratifying in advance whatever production allowables are set by the States with a possibility of restriction being used to the disadvantage of the ultimate consumer provokes the rejoinder that the States have that power anyway.

Apart from that the expressions on the Senate side are to be commended to the House, that the sole immediate need is the enactment of a section which will remedy the objections of the Supreme Court, leaving the question of other legislation on oil, if any, for further consideration after a thorough study of the subject.

It is very evident from the attitude in the Senate that attempts in the House to burden the simple substitute for section 9(c) with other schemes for Federal regulation will not meet with favor in the other chamber and action will be delayed indefinitely.

Further that amendment of section 9(c) is the only point for Federal legislation that has the support of Texas and of the oil industry entitles it to action by Congress without obstructing it with controversial amendments. There will be ample time to consider further legislation but action on this one point is needed immediately.

The fact that exactly two weeks from the date of the recent conference of oil state governors at Ponca City, the House and Senate of New Mexico passed and Governor Clyde Tingley signed a bill, (with an emergency clause, making it effective immediately,) authorizing negotiations for an interstate compact, should be noted by Congress. The Cole Committee, it will be recalled, deferred action, among other reasons, until the oil state governors could indicate their intentions.

Pessimistic predictions that it would take 20 years to get an interstate compact through are discounted by the fact that one-third of the number of states necessary to institute the pact has already taken definite action enacted into law.

This is another reason why Congress should not be in haste to dabble in experimental legislation for Federal control of the oil industry as the Cole Committee indicated. Success of the interstate movement would supply a regulatory system that would avoid any excuse for Federal control of the industry.

A Temporary Flurry

The decision of the Texas Court permitting the shipment of gasoline placed in storage before the Railroad Commission's order requiring tenders went into effect is causing a temporary flurry in the market.

According to the commission's record there were 2,200,000 barrels of oil or products in storage December 10 when the order became effective. Of this 175,000 barrels was gasoline, 1,000,000 barrels crude and the rest fuel oil.

The total is less than the equivalent of one day's crude production for the entire country. And, rigidly supervised by the Railroad Commission, which has the total enumerated and spotted, that should be all that is shipped under this order of release.

It is true there are fears that tanks will be emptied rapidly and refilled for additional shipment without tender but if the Railroad Commission is really vigilant this should not be permitted.

The quantity dumped by the court order may, of course, be disturbing, unless buyers interested in stabilization act promptly to take it off the market. But the effects should not be prolonged if the Texas authorities see to it that the order is not spread to include additional "hot" oil or products.

If, as has been asserted, there is a need for gasoline in certain quarters the opportunity should provide an outlet for this excess supply if it is not repeated.

One aspect was presented by the suggestion before the Court handed down its decision that it might be a good thing if this accumulated storage was cleaned up and the Railroad Commission was given a fresh start with a clean slate.

The removal of untendered storage from the field should fortify the commission in insisting upon tenders for all shipments thereafter.

This decision freeing all questioned crude and products up to December 10, leaves the Railroad Commission in unchallenged control of all production and storage since that date. It both strengthens its position and centralizes its responsibility for the future.

From all accounts the holders of this untendered storage will get rid of it in a hurry. When the tanks are emptied they can be filled only with oil or products that come under the tender law and the commission will be expected to see that they do.

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Recently one of the prominent oil refineries was in the market for a soaking drum. After investigation they selected, as best suited for their purpose, a Kellogg "Masterweld" vessel. Incidentally this soaking drum was the first heavy walled, welded pressure vessel ever purchased by this company.

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Court's Decision Releasing Stocks in East Texas Spreads Uneasiness in the Group 3 Market

By T. F. SMILEY

Questions concerning the disposition of some 2,200,000 bbls. of illegal oil and oil products in East Texas released last Saturday by court decisions in injunction suits exerted a disquieting effect on the Group 3 market this week. According to common report these stocks included 1,000,000 bbls. of crude and 175,000 bbls. of gasoline, with fuel oil making up most of the remainder. Five days were fixed by the court for inventory of the products, after which they might be sold. The material had been stored prior to December 10, the effective date of the Texas Railroad Commission's order requiring shippers of oil products to show they had not been made from unlawful crude.

Reports gained circulation last week that no market disturbance need be feared from these East Texas accumulations for the reason that arrangements already had been made to absorb them in case they should be released by the court's decision. A rumor was that they would be moved to the Gulf. One supposition was that the larger integrated companies which in recent weeks had been buying distress stocks of gasoline from independent refiners would also absorb this East Texas material.

Still Looking for Buyers

But it became evident early this week that no such ready removal of the potential market threat was in sight. Owners of the gasoline stocks were casting about among buyers without any clear signs of success.

If the 1,000,000 bbls. of crude were processed, it would yield about 350,000 bbls. of gasoline, which added to the 175,000 bbls. estimated already to be in storage, would make a total of 525,000 bbls., or about 2,900 cars.

Not a formidable problem under some conditions, but in the absence of definite plans for taking care of it, market observers who previously had been inclined to minimize its importance, now regard it as likely to be a disturbing factor till it is disposed of. Just how much of this gasoline there is or will be and over what length of time it will be started out into consuming channels have become lively questions.

More Refineries Operating

Additions to the list of active refineries in the East Texas area have not helped the market any. Twenty-six plants were reported in operation this week as against 20 on January 7, when the U. S. Supreme Court invalidated the section of the recovery act designed to stop hot-oil operations and thus automatically abolished the federal tender board, which had brought about startling improvement in the East Texas muddle. Although the state tender board remains and railroads are refusing oil shipments unaccompanied by tenders issued by that board, movement of gasoline by trucks is reported to have grown rapidly.

Comfort might be extracted from the fact that January is a month of low consumption and that low-octane gasoline quotations are running almost parallel to those of a year ago if it were not that East Texas was running wide open then and that in the meantime the more menacing conditions there have been remedied.

Whatever may be the outcome of developments in recent weeks exerting an adverse effect on the market, belief is expressed that so far as these conditions have resulted from invalidation of Section 9 (c) of the recovery act they will be of relatively short duration, as reports from Washington indicate that a remodeled law will soon be placed on the statute books to take the place of the one invalidated by the Supreme Court. What is worrying refiners and marketers in the Group 3 area, however, is the damage that may be done in the meantime.

Naturals Hold Up Well

All grades of natural gasoline held their own, extending a record already phenomenal, and the market was described as firm on the basis of orders placed early in January. Movement of material to the Gulf Coast for export and coastwise shipment accounted for the major part of the week's activity. It was said, in fact, that but for this cargo business the natural gasoline market probably would be weak at this juncture.

Kerosene went to higher levels, as it had given promise of doing for several weeks. Cargo buying of 41-43 for shipment to the Gulf cleaned up East Texas of all its stocks and extended to Oklahoma refineries, creating a real scarcity of this material. Prices rose an eighth in Oklahoma and North Texas. In North Louisiana and Arkansas they jumped a half-cent.

Furnace oils were strong at current prices, and a spell of real winter weather in northern states would send quotations up.

Steam-refined stocks, though exhibiting no increase in strength, ran into no weak spots of consequence, and this in itself was considered encouraging, for the demand for steam refined stocks in recent months has been nothing to stir enthusiasm. Bright stocks were considered satisfactory, especially in view of the fact that Pennsylvania prices had started upward. Neutrals were steady, as was wax, with no price changes in either.

Refined Oil Market Barometer

Notwithstanding nervousness in the Mid-Continent area over the possible temporary effects of throwing into the market a large accumulation of unlawfully produced gasoline, fuel oil and crude released by a court decision, the undertone of feeling generally seems to be that a fairly firm basis has been reached from which the market in all oil products may be expected to develop strength. Retail gasoline prices have undergone a marked degree of stabilization, and litigation which has injected uncertainty into the situation for months is slowly being cleaned up.

Mid-Continent.—Gasoline unsteady, kerosene and furnace oils strong. Naturals and lubricants holding up well.

East Coast.—Gasoline in much healthier state. Demand for natural more active. Kerosene tight. Steam-refined and bright stocks slow.

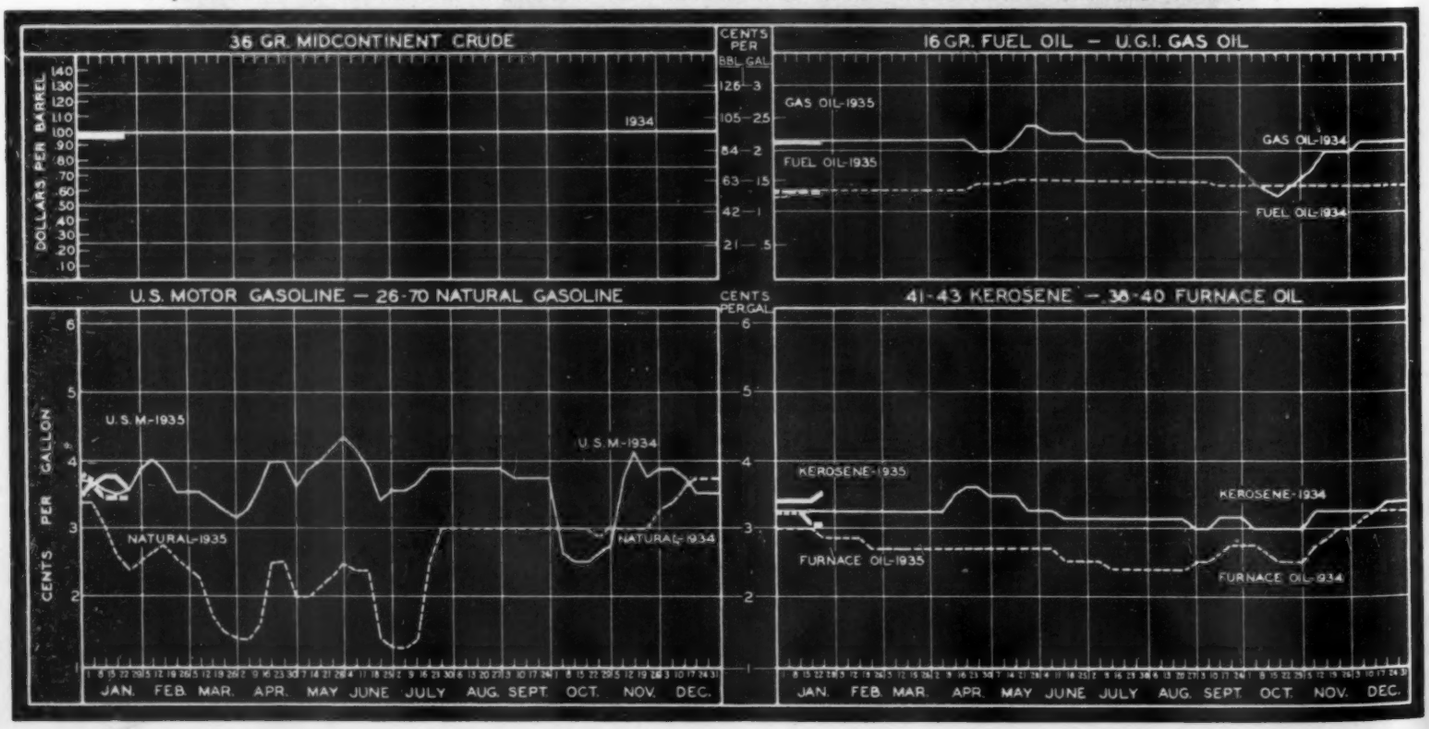
Gulf Coast.—Gasoline lacking strength. All markets slow, with no changes in price.

Pennsylvania.—Gasoline slightly better. Kerosene movement good. Bright stocks much improved.

California.—Market steadier, with prices unchanged.

Chicago.—Gasoline easy on moderate offerings and slow buying. Heating oils in good call.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



Eastern Gasoline Market to Higher Quotations; Prospects Felt Better Than for Many Years

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, Jan. 21.—The gasoline market in this territory moved to generally higher levels today when major companies advanced their quotations extending from their refineries to service stations. In the service station end, the advance at practically all points in New England and New York with the exception of Western New York, was one-half cent per gallon. The increase in tank car prices at most of ehe large refining and distributing centers along the Atlantic Seaboard was one-fourth cent per gallon.

The new tank car prices in New York Harber are: 6 1/2 cents for the branded regular grades of the major distributors and among the white grades, 6 1/4 cents for 65 octane and above; 6 cents for middle octane and 5 3/4 cents for the low octane grade. These same prices were effective at several other points along the seaboard with one-fourth cent higher postings quoted by several companies for New Jersey delivery.

The one-half cent advance in service station prices did not apply to Buffalo, Rochester and several other points in western New York where the dealer and retail markets are still giving trouble. Last week it was possible to maintain the normal dealer and service station prices established at Buffalo early in an attempt to end a long drawn out price war, and they were again reduced 4 cents per gallon. There are several other points in the same territory where prices are low.

Except for those points, New England and New York State now has a healthier retail gasoline price structure than any time in several months. For over a year distributors in this territory have been contending with scattered price wars so that in the late fall prices were below the desired levels from 1 to 4 cents per gallon at practically all points.

Normal Prices

Eliminating the points where price wars are still being waged and the remainder of the gasoline retail wars are within one-half to 1 cent a gallon of normal levels, and in the case of tank car prices one-fourth to one-half cent. By normal is meant the prices which were established in the early fall of 1933 when a general effort was made to place all branches of the industry on generally higher price levels. At that time, $1.00 a barrel was posted as the price for 36° gravity crude in the Mid-Continent and refiners endeavored to establish gasoline tank car, dealer and retailer quotations in line with this base cost. It was agreed then that the miuimum price for middle octane U. S. Motor at Atlantic Seaboard points should be 6 1/2 cents at refineries. The aim in regard to retail prices was to establish a minimum spread of 6 cents between the delivered tank car and service station prices for the regular branded motor grade containing tetra ethyl lead which was to be one-half cent above the middle octane material. In other words, assuming a 7-cent price for regular branded grades of the major companies the freight would be added to the refinery price making a delivered quotation to which the 6 cents would be added in arriving at a fair retail price. As indicated these were to be minimum prices which presumably would at least cover the costs of refining, transporting and distributing. It was hoped that later these schedules could be advanced to more profitable levels.

Since that time gasoline markets in this territory and others have wandered a long way from these objectives. The $1.00 crude price has been maintained but price-cutting started in the gasoline market within 30 days after the base quotations were established. The history of the developments over the past 18 months in refinery and retail prices is too recent to require an explanation here.

Last fall this weak market situation reached a climax in a series of price wars in which quotations dropped to levels which had no relationship to any of the costs of manufacture and distribution. It is the past history of the oil business that when gasoline prices drop to such low levels that they bring heavy losses, a base from which recovery can start, is established, and the present situation is no exception. The advances of today and those made previously over the month reflect the fact that all of those concerned agree on the futility of prices below costs in gasoline competition and are now anxious for a return to the so-called normal price levels.

Just how long this situation will continue depends on several developments which cannot be accurately gauged at this time. As has been previously explained in these columns there are those who feel that the prospect for maintaining gasoline prices at break-even or profitable levels is better now than at any time in four or five years. They feel that there is less of the artificial in the present upturn than any time since over-production of crude became the major problem of the industry. They point out that due to the fact no major fields were discovered in 1933 and 1934 the fear of over-production has been lessened. The improved statistical situation above ground is also pointed to as the basis for a sustained price recovery.

Picture Easily Smeared

These observers concede that uncontrolled operations in Texas centering in East Texas could smear this optmistic picture rather quickly. They are confident that this will not materialize claiming that new federal legislation is assured which will present such a development should Texas control prove inadequate.

In regard to prices at least one competent observer is optimistic regarding 1935 prospects even if there should be a complete collapse in control efforts in Texas. He offers some rather startling data tending to show that with the "lids" lifted in the remaining flush oil fields, a flood of oil would quickly end and the industry in this country would then be faced with the most acute shortage in several years. This conclusion is based on deductions showing that present reserves are much less than have been generally assumed and that strict control is necessary not so much to prevent a temporary over-production as to provide for orderly withdrawal so that the greatest ultimate production can be be obtained from the present proven reserves.

Another factor in the improved gasoline prices of the past month according to one sales manager, is the relatively high consumption so far this winter. In this immediate territory at least weather conditions have been much better for the use of cars than last year. The sales of this manager's company are running substantially ahead of last year and he feels that this fact is aiding in correcting bad price situations.

Other Products

The demand for natural gasoline in this territory has been improved. The price for this product is determined in the Mid-Continent where it is manufactured and the Gulf Coast is the accepted basis of quotation for this section. The reception given the aviation grade gasolines by domestic consumers is said to explain this increased demand. Two companies have featured these aviation grades as premium fuels and other companies have increased the volatility of their premium and regular grades.

Aside from purchase of natural gasoline this trend toward more volatile motor fuels tends to reduce gasoline yields at refineries by eliminating part of the heavier ends. This development at some plants has been tied in with greater yields of kerosene for which the market has been strong since early fall. In this arrangement due to the high prices for kerosene the lower endpoint gasoline is obtained with little if any sacrifice in plant realization.

Most of the large and small refiners and water terminal operators in this territory are quoting 6¼ cents for water white kerosene and the market is tight at that price. The advances in gasoline will aid in maintaining this price over the next few weeks. The No. 1 furnace oil is also strong at 6 and 6 1/4 cents. The usual tank car quotations on the other three grades of furnace oils are 4 3/4 cents.

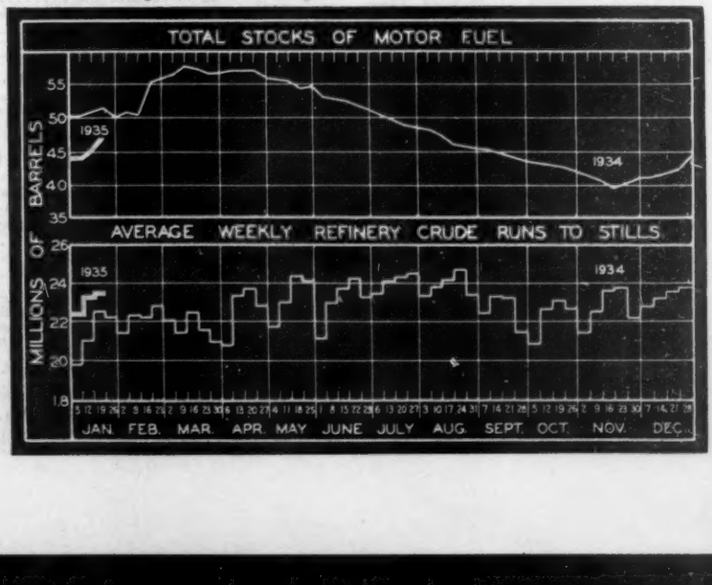
In regard to the heavier oils—overhead and residual fuels—the demand is fair and prices steady.

Refiners of steam refined stocks and bright stocks have little to be optimistic about. Both the domestic and export demand continues slow. The Western and Pennsylvania bright stocks are losing part of their former prestige as material for compounding finished motor oils in which the trend is toward the lighter viscosity oils. Pennsylvania bright stock (No. 8) has been quoted as low as 22 cents in barrels for export. Pennsylvania neutrals are strong No important changes were reported during the week in wax prices.

American Petroleum Institute Weekly Refinery Statistics

Week Ending January 19, 1935

	Capacity reporting per cent	Daily crude runs (bbls.)	Finished motor fuel (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	433,000	13,240,000	12,203.000
Appalachian	93.3	96,000	1,958,000	1,247,000
Indiana, Illinois, Kentucky	94.6	313,000	7,639,000	4,871,000
Oklahoma, Kansas, Missouri	84.7	254,000	4,558,000	4,022,000
Inland Texas	47.6	98,000	1,274,000	1,812,000
Texas Gulf	97.7	539,000	6,000,000	10,248,000
Louisiana Gulf	96.4	109,000	1,082,000	4,166,000
North Louisiana and Arkansas	83.7	44,000	240,000	471,000
Rocky Mountain	66.7	36,000	676,000	745,000
California	96.9	425,000	10,319,000	66,249,000
Total United States	89.8	2,347,000	46,995,000	106,034,000



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasolines

OKLAHOMA (Group 3)—	Jan. 22		Jan. 15	
U. S. Motor grades:				
Below 63 octane	.03⅝	.03¾	.03¾	.03⅞
63-70 octane	.04⅜	.04⅝	.04⅜	.04⅝
60-62 400 grades:				
Below 63 octane	.03⅝	.03¾	.03¾	.03⅞
63-70 octane	.04⅜	.04⅝	.04⅜	.04⅝
64-66 375	.04	.04¼	.04	.04¼
68-70 360	.04¼	.04⅜	.04¼	.04⅜
NORTH TEXAS—				
U. S. Motor grades:				
Below 63 octane	.03⅝	.03¾	.03¾	.03⅞
63-70 octane	.04⅜	.04½	.04⅜	.04½
60-62 400	.03⅝	.03¾	.03¾	.03⅞
64-66 375	.03⅞	.04	.03⅞	.04
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 63 octane	.04¼	.04⅜	.04¼	.04⅜
63-70 octane	.05⅜		.05⅜	
60-62 400	.04¼	.04½	.04¼	.04½
ARKANSAS (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 63 octane	.04¼	.04⅜	.04¼	.04⅜
63-70 octane	.05⅜		.05⅜	
CHICAGO (based on Oklahoma Group 3)—				
U. S. Motor grades:				
Below 63 octane	.03½	.04	.03¾	.04
63-70 octane	.04½	.04¾	.04½	.04¾
60-62 400	.03⅝	.04	.03¾	.04
64-66 375	.04	.04½	.04	.04¼
68-70 360	.04¼	.04⅜	.04¼	.04½
Aviation fighting grade	.04⅞	.05	.04⅞	.05
PENNSYLVANIA (inland refineries)—				
58-60 U. S. Motor:				
Below 60 octane	.04⅛		.04	
60-64.9 octane	.05⅝		.05⅝	
65-70 octane	.06		.06	
68-70 350	.03½		.05½	
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.07	.08	.07	.08
58-60 400	.08	.09	.08	.09
EAST COAST—				
U. S. Motor, below 60 octane:				
*New York	.05¾		.05½	.05½
Baltimore	.05¾		.05¼	.05½
U. S. Motor, 60-64 octane:				
*New York (Bayonne)	.06		†.05½	.05¾
Philadelphia	.06		.05½	.05¾
Boston	.06	.06¼	.05¾	
Baltimore	.06		.05½	.05¾
Charleston, S. C.	.06		.05½	.05¾
U. S. Motor, 65 and above:				
*New York	.06¼		‡.05¾	.06
Philadelphia	.06¼		.05¾	.06
Boston	.06¼	.06½	.06	.06¼
Baltimore	.06¼		.05¾	.06
Charleston, S. C.	.06¼		.05¾	.06

*All grades of gasoline one-fourth cents less for small barge shipments.
†For New Jersey delivery, 6¼ cents.
‡For New Jersey delivery, 6½ cents.

GULF COAST (domestic)—				
U. S. Motor:				
Below 60 octane	.04¼	.05	.04¾	.05
60-64.9 octane	.05	.05¼	.05	.05¼
65 octane and higher	.05¼		.05¼	

Naphthas

	Jan. 22	Jan. 15
PENNSYLVANIA (inland refineries)—		
50-52 (blending)	.04	.04
52-54 450 (blending)	.04	.04
54-56 450 (blending)	.04	.04
50-52 450 (blending)	.04	.04
CHICAGO (based on Oklahoma Group 3)—		
50-52 450 (blending)	.03¾ .04	.03¾ .04
Cleaners' naphtha, 56-58 gr., 200 i.b.p., 320 e.p.	.06¾ .07	.06¾ .07
Lacquer diluent, 180 i.b.p., 250 e.p.	.07¾ .08	.07¾ .08
Lacquer diluent, 140 i.b.p., 200 e.p.	.08¾ .09	.08¾ .09
Rubber solvent, 68-70 gr., 100 i.b.p., 300 e.p.	.06¾ .07	.06¾ .07
Stoddard solvent, 300 i.b.p., 410 e.p., over 83° flash	.06¼ .06½	.06¼ .06½
Pet. thinner, 290-300 i.b.p., 415 e.p., over 83° flash	.06¼ .06½	.06¼ .06½
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p., 330 e.p.	.06¾ .07	.06¾ .07
Petroleum spirits	.05¾ .06	.05¾ .06

Natural Gasolines

OKLAHOMA (Group 3)—	Jan. 22		Jan. 15	
Grade 26-70	.03½		.03½	
Grade 18-55	.04⅞	.04¼	.04⅞	.04¼
Low vapor pressure grades:				
14 lb. v.p. (max.)	.04⅝	.04⅞	.04⅝	.04⅞
12 lb. v.p. (max.)	.04¾	.04⅞	.04¾	.04⅞
NORTH TEXAS—				
Grade 26-70	.03¼		.03¼	
Grade 18-55	.03⅞	.04⅛	.03⅞	.04⅛
Low vapor pressure grades:				
14 lb. v.p. (max.)	.04¼	.04½	.04¼	.04½
12 lb. v.p. (max.)	.04⅝	.04⅞	.04⅝	.04⅞
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
Grade 26-70	.03¾	.03⅞	.03¾	.03⅞
CALIFORNIA—				
75-85 375	.06½	.06¾	.06½	.06¾

Kerosenes

(All kerosenes water white)

OKLAHOMA (Group 3)—	Jan. 22		Jan. 15	
41-43	.03½	.03⅝	.03⅜	.03½
42-44	.03⅝	.03¾	.03½	.03⅝
NORTH TEXAS—				
40-41	.03¼	.03⅜	.03⅛	.03¼
41-43	.03½	.03⅝	.03⅜	.03½
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
41-43	.03¾		.03⅜	
ARKANSAS (Ark., N. La. & Miss. del.)—				
41-43	.03¾		.03⅜	
PENNSYLVANIA (inland refineries)—				
45	.04⅜	.04½	.04⅜	.04½
46	.04½	.04⅝	.04½	.04⅝
47	.04⅝	.04¾	.04⅝	.04¾
CHICAGO (based on Oklahoma Group 3)—				
41-43	.03½	.03⅝	.03½	.03⅝
42-44	.03⅝	.03¾	.03⅜	.03¾
CALIFORNIA (Pacific Coast consumption)—				
38-40 high burning test	.04¾	.05¼	.04¾	.05¼
NEW YORK (Bayonne, N. J.)—				
41-43	.06¼		.06¼	
GULF COAST (domestic)—				
41-43	.04¾	.05	.04¾	.05

Petroleum Coke

(Prices per ton f.o.b. refineries in Chicago area)
(Refineries will absorb freight to 80 cents a ton)

	Jan. 22	Jan. 15
Still run	6.00	6.00
Direct from still	7.00	7.00
Egg, nut, pea	8.50	8.50
Lump	8.50	8.50

Furnace Oils and Tractor Fuels

(Zero cold test under 190° flash and good odor)

OKLAHOMA (Group 3)—	Jan. 22		Jan. 15	
32-36 straw	.03	.03⅛	.03	.03⅛
36-38 straw	.03⅛	.03¼	.03⅛	.03¼
38-40 straw	.03⅛	.03¼	.03⅛	.03¼
38-40 prime white	.03¼	.03⅜	.03¼	.03⅜
NORTH TEXAS—				
38-40 straw	.03¼	.03⅜	.03¼	.03⅜
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
36-40 furnace oil	.03	.03⅛	.03	.03⅛
ARKANSAS (Ark., N. La. & Miss. del.)—				
32-36 furnace oil	.03	.03⅛	.03	.03⅛
CHICAGO (based on Oklahoma Group 3)—				
32-36 straw	.03¼	.03⅜	.03¼	.03½
38-40 straw	.03¼	.03½	.03¼	.03½
38-40 prime white	.03⅜	.03½	.03⅜	.03½
NEW YORK (Bayonne, N. J.)—				
No. 1	.06	.06¼	.06	.06¼
No. 2	.04¾		.04¾	
No. 4	.04¾		.04¾	

Gas Oil, Diesel Oil and Fuel Oil

(Gas oil per gal., Diesel and fuel oils per bbl.)

OKLAHOMA (Group 3)—	Jan. 22		Jan. 15	
32-36 gas oil, cracking stock	.02⅛	.02¼	.02⅛	.02¼
U.G.I. gas oil	.02⅛	.02¼	.02⅛	.02¼
32-36, zero to 15 gas oil	.02¾	.02⅞	.02¾	.02⅞
28-30, No. 3 burner oil	1.10	1.15	1.10	1.15
26-30, zero to 10 fuel oil	.95	1.00	.95	1.00
24-26 fuel oil	.77½	.80	.77½	.80
20-22 fuel oil	.72½	.75	.72½	.75
Below 16 fuel oil	.60	.62½	.60	.62½
NORTH TEXAS—				
32-36 gas oil, industrial	.02⅛	.02¼	.02⅛	.02¼
22-26 fuel oil	.67½	.70	.67½	.70
Below 20 fuel oil	.60	.62½	.60	.62½
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
30-32 gas oil, zero	.03	.03⅛	.03	.03⅛
14-16 fuel oil	.70	.75	.70	.75
ARKANSAS (Ark., N. La. & Miss. del.)—				
30-32 gas oil, zero	.03	.03⅛	.03	.03⅛
32-36 gas oil	.02⅞	.03	.02⅞	.03
14-16 fuel oil	.70	.75	.70	.75
CHICAGO (based on Oklahoma Group 3)—				
32-36 gas oil, industrial	.02	.02⅛	.02	.02⅛
28-30 zero to 10, fuel oil	1.05	1.10	1.05	1.10
26-28 zero to 10, fuel oil	.95	1.00	.95	1.00
22-26 zero to 10, fuel oil	.82½	.87½	.82½	.87½
18-22 zero to 10, fuel oil	.67½	.72½	.67½	.72½
Below 18 fuel oil	.57½	.62½	.57½	.62½

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel in all these areas.

PENNSYLVANIA (inland refineries)—				
30-40	.03¾	.04	.03¾	.04
CALIFORNIA—				
Los Angeles:				
30-34 gas oil per bbl.	1.10	1.26	1.10	1.26
27 plus Diesel	1.10	1.15	1.10	1.15
27 plus Diesel (bunkers)	1.13	1.20	1.13	1.20
12-16 (bunkers at tidewater)	.82½	.85	.82½	.85
10-16 (cargo lots)	.70	.75	.70	.75
12-17 (tank cars)	.62½	.80	.62½	.80
San Joaquin Valley:				
10-18 (tank cars)	.60	.70	.60	.70
San Francisco:				
27 plus Diesel per bbl.	1.15	1.20	1.15	1.20
27 plus Diesel (bunkers)	1.19		1.19	
10-16 (bunkers)	.90		.90	
GULF COAST—				
28-30 gas oil	.03½	.03⅝	.03½	.03⅝
28-30 Diesel (bunkers)	1.70		1.70	
Bunker C (bulk cargoes)	.85	.90	.85	.90
Bunker C (bunkers)	.95	1.00	.95	1.00
NEW YORK (Bayonne, N. J.)—				
27 plus gas oil	.04¾		.04¾	
28-30, Diesel (lighterage 6½ cents per bbl.)	1.89		1.89	
28-30 Diesel (tank cars)	.04¾		.04¾	
*Bunker C (to ocean-going ships in N. Y. harbor)	1.15		1.15	

*Lighterage charge 5 cents per barrel additional.

Neutral Oils

(Vis. at 100° F. except Pennsylvania, and color N.P.A.)

OKLAHOMA (Group 3)—	Jan. 22		Jan. 15	
Zero to 10 Cold Test:				
150-3	.10		.10	
180-3	.11¼		.11¼	
180-4	.10¾		.10¾	
200-3	.11¾		.11¾	
200-4	.11¼		.11¼	
240-3	.13¾		.13¾	
240-4	.13¼		.13¼	
280-3	.14¾		.14¾	
280-4	.14		.14	
300-3½	.15¼		.15¼	
400-4	.17¼		.17¼	
100-2 paraffin oil	.05¾		.05¾	
15-20 Cold Test:				
200-3	.10¾		.10¾	
200-4	.10¼		.10¼	
240-3	.12¾		.12¾	
240-4	.12¼		.12¼	
280-3	.13¾		.13¾	
280-4	.13		.13	
GULF COAST—				
Pale Oils:				
200-3	.07¼	.07½	.07¼	.07½
300-3	.07½	.08	.07½	.08
500-3½	.08½	.09	.08½	.09
750-3½	.09	.09¼	.09	.09¼
1,200-3½	.09½	.09¾	.09½	.09¾
2,000-4	.09¾	.10	.09¾	.10
Red Oils:				
200-5-6	.07	.07¼	.07	.07¼
300-5-6	.07¼	.07½	.07¼	.07½
500-5-6	.08	.08½	.08	.08½
750	.08½	.09	.08½	.09
1,200-5-6	.09¼	.09½	.09¼	.09½
CALIFORNIA (Moving to domestic market)—				
Pale Oils:				
100-2½-3	.12½	.14½	.12½	.14½
200-2½-3	.12½	.14½	.12½	.14½
300-3-3½	.12½	.14½	.12½	.14½
350-3-4	.12½	.14½	.12½	.14½
400-3-4	.12½	.14½	.12½	.14½
450-3-4	.12½	.14½	.12½	.14½
550-3-4	.12½	.14½	.12½	.14½
600-3-4	.12½	.14½	.12½	.14½
Red Oils:				
200-4-5	.12½	.14½	.12½	.14½
300-5-6	.12½	.14½	.12½	.14½
350-5-6	.12½	.14½	.12½	.14½
400-5-6	.12½	.14½	.12½	.14½
450-5-6	.12½	.14½	.12½	.14½

500-5-6	.12½	.14½	.12½	.14½
600-5-6½	.12½	.14½	.12½	.14½
700-6½ plus	.12½	.14½	.12½	.14½
750-6½ plus	.12½	.14½	.12½	.14½
900-6½ plus	.12½	.14½	.12½	.14½
PENNSYLVANIA—				
150 vis. at 70° F., 3 color, 400-405 flash:				
Zero pour test	.24¼	.25	.24¼	.25
10 pour test	.23½	.24	.23½	.24
15 pour test	.23	.23½	.23	.23½
25 pour test	.22	.22½	.22	.22½
180 vis. at 70° F., 3 color:				
25 pour test	.24½	.25	.24½	.25
200 vis. at 70° F., 3 color:				
Zero pour test	.30½	.31	.30½	.31
10 pour test	.29½	.30	.29½	.30
15 pour test	.29	.29½	.29	.29½
25 pour test	.28	.28½	.28	.28½

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	Jan. 22		Jan. 15	
Bright Stocks:				
190-200 D	.16½		.16½	
150-160 D, 0-10	.13½		.13½	
150-160 D, 10-25	.13		.13	
150-160 24-40	.12½		.12½	
150-160 E	.12½		.12½	
Steam refined:				
630 light green (treated)	.07½	.08	.07½	.08
600 light green (untreated)	.06	.08	.06	.08
600 dark green (untreated)	.04½	.07	.04½	.07
PENNSYLVANIA—				
Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 210; 540-550 flash):				
10 pour test	.18	.18½	.17½	.18½
15 pour test	.17	.17½	.16½	.17½
20 pour test	.15½	.16	.15	.16
25 pour test	.15	.15½	.14½	.15½
Steam refined:				
600	.08	.09	.07¼	.08¼
650	.10	.11	.10	.11
600 Pennsylvania flash	.11	.12	.11	.12
630 flash	.16	.17	.16	.17
600 Warren E filtered	.12	.13	.12	.13

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	Jan. 22		Jan. 15	
124-126 white crude scale	.03⅜	.03¼	.03⅛	.03¼
PENNSYLVANIA—				
122-124	.0300	.0305	.0310	.0315
124-126	.0305	.0310	.0315	.0320
NEW YORK—				
Wax (a.m.p.) in bags fully refined:				
120-122	.0420	.0430	.0420	.0430
123-125	.0440	.0460	.0440	.0460
125-127	.0445	.0470	.0445	.0470
130-132	.05	.0510	.05	.0510
133-135	.0545	.0570	.0545	.0570
135-137	.0570	.0595	.0570	.0595
124-126 crude scale	.03	.0310	.03	.0310
Petrolatum in barrels in carload lots:				
Dark green	.01⅞		.01⅞	
Amber	.02⅛	.03	.02⅛	.03
Extra amber	.03	.03⅛	.03	.03⅛
Lily white	.06⅝	.06¾	.06⅝	.06¾
Snow white	.07¼	.07⅞	.07¼	.07⅞
Cream	.05⅞	.05¾	.05⅞	.05¾
CHICAGO (f.o.b. switching district)*—				
122-124 wax	.0490	.0500	.0490	.0500
125-127 wax	.0515	.0525	.0515	.0525
127-129 wax	.0530	.0540	.0530	.0540
130-132 wax	.0590	.0600	.0590	.0600
132-134 wax	.0615	.0625	.0615	.0625

*Cents per pound on carlot orders in burlap bags of 225 lbs. approx. Add 3° F. a.m.p.

Export Prices

GASOLINE

GULF COAST—	Jan. 22		Jan. 15	
U. S. Motor	.04½	.04⅝	.04½	.04⅝
60-62 400	.04¾	.04⅞	.04¾	.04⅞
61-63 390	.04⅞	.05	.04⅞	.05
64-66 375	.05	.05⅛	.05	.05⅛
LOS ANGELES, CALIF.—				
U. S. Motor grades:				
53-55 octane	.04	.04¼	.04	.04¼
55-65 octane	.04¼	.04½	.04¼	.04½
65-67 octane	.04½	.04¾	.04½	.04¾
67-69 octane	.04¾	.05	.04¾	.05
Above 69 octane	.05	.05¼	.05	.05¼
58-60 400 endpoint	.04¾	.05½	.04¾	.05½

KEROSENE

GULF COAST—				
41-43 prime white	.04¾	.04⅞	.04¾	.04⅞
41-43 water white	.04⅞	.05	.04⅞	.05
44 water white	.05⅛	.05¼	.05⅛	.05¼
LOS ANGELES, CALIF.—				
41-43 water white	.04½	.04¾	.04½	.04¾

LUBRICANTS

NEW YORK (f.a.s. in bbls.)—				
Cylinder Stocks:				
600 Warren E	.19	.20½	.19	.20
600 S.R. unfiltered	.14½	.15	.14½	.15
650 S.R. unfiltered	.17	.18	.17	.18
600 flash S.R.	.18	.18½	.18	.18½
630 flash S.R.	.22½	.23	.22½	.23
Bright Stocks:				
8 color	.22	.22½	.22½	.23
6½ plus colors in dilution	.21	.21½	.21	.21½

NEUTRAL OILS

200-3 color	.35	.36	.34½	.35
150-3 color	.28½	.29	.28	.29

PARAFFIN WAX (Fully Refined)

NEW YORK (prices per pound):				
120-122 a.m.p.	.0405	.0425	.0405	.0425
123-125 a.m.p.	.0435	.0455	.0435	.0455
125-127 a.m.p.	.0440	.0465	.0440	.0465
128-130 a.m.p.	.04¾	.0490	.04¾	.0490
130-132 a.m.p.	.0495	.0505	.0495	.0505
133-135 a.m.p.	.0540	.0565	.0540	.0565
135-137 a.m.p.	.0565	.0590	.0565	.0590

Crude Oil Gravity Table

Gravity—	Oklahoma and Kansas	North Texas, Central Texas and East Central Texas	North Louisiana and Arkansas	Gray County, Texas	Carson, Hutchinson and Moore Counties, Texas	Conroe, Texas	Salt Creek, Wyo.	Gulf Coast, Texas and Louisiana	Gulf Coast, Texas and Louisiana	Cotton Valley, Louisiana
	1	2	3	4	5	6	7	8	9	10
Below 20	....	....	....	....	....	....	....	$.82	$.82	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....
24-24.9	....	....	....	....	....	....	....	.92	.92	....
Below 25	*$.76	....	....	....	....	....	....	....	....	$.70
25-25.9	*.78	....	....	....	....	....	....	.94	.94	.72
26-26.9	*.80	....	....	....	....	....	....	.96	.96	.74
27-27.9	*.82	....	....	....	....	....	....	.98	.98	.76
28-28.9	*.84	....	....	....	....	....	....	1.00	1.00	.78
Below 29	.84	$.79	$.79	....	....	....	$.84	....	....	....
29-29.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.80
30-30.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.82
31-31.9	.90	.85	.85	....	....	....	.90	1.06	1.05	.84
32-32.9	.92	.87	.87	....	....	....	.92	1.08	1.06	.86
33-33.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.88
34-34.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.90
Below 35	....	....	....	$.79	$.69	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.09	.98	1.12	1.09	.92
36-36.9	1.00	.95	.95	.83	.73	1.11	1.00	1.12	1.10	.94
37-37.9	1.02	.97	.97	.85	.75	1.13	1.02	1.12	1.11	.96
38-38.9	1.04	.99	.99	.87	.77	1.15	1.04	1.12	1.12	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	1.00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	1.02

Effective December 3, 1934, Panhandle Refining Co., purchasing oil in North Texas, posted below 29 degrees, 68 cents; 29-29.9 degrees, 70 cents, with 2 cents added for each additional degree up to 40 and over, at 92 cents.

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedule: Below 25°, 76 cents; 25-25.9°, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08; Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co., and Wilcox Oil & Gas Co. All others begin their schedules at below 29°, 84 cents, excepting Phiitex Oil Co., which begins with below 31° at 88 cents.

Column 1—Effective September 29, 1933, Texas Co. of Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas and Oklahoma; Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Phiitex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; October 1, by Barnsdall Refineries, Inc., in Oklahoma.

Column 2—Effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective January 14, 1935, in the Van Pool, Van Zandt County, Pure Oil Co. posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03.

Column 3—Effective September 29, 1933, by Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective December 22, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03. Effective March 17, 1934, by Standard Oil Co. of Louisiana and Louisiana Oil Refining Co. Starting with below 25°, 71 cents, adding 2 cents for each degree upward to 40 and over at $1.03.

Column 4—Effective September 29, 1933, by Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co., and H. F. Wilcox Oil & Gas Co. On same day, Phiitex Oil Co. posted below 31°, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 5—Effective September 29, 1933, by Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Phiitex Oil Co. posted below 31°, 61 cents, with 2 cents added for each degree upward to 40 and over at $1 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 6—Effective September 29, 1933, by Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30 by Texas Co., which on September 29 had posted a schedule of $1.07 to $1.12 with a 1-cent spread on each degree.

Column 7—Effective September 29, 1933, by Stanolind Oil & Gas Co.

Column 8—Effective September 29, 1933, by Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana, 20-20.9°, 84 cents, with 2 cents added for each degree upward to 34 and over at $1.12; and in Cameron Meadows and Iowa, Louisiana, below 20°, 72 cents, with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 20°, 70 cents, with 2 cents added for each degree upward to 34° and over at $1; and in Black Bayou and White Castle, Louisiana: Below 20°, 80 cents, with 2 cents added for each degree upward to 34° and over at $1.10.

Column 9—Effective September 30, 1933, Texas Co. (On September 29 Texas Co. has posted a schedule of 2 cents on each degree, but changed it on September 30.)

Column 10—Effective September 29, 1933, by Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 81)

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas $1.00
Corsicana (heavy) (June 17, 1933)* ..... .80
Other fields ..... (See gravity table)

Note—In East Texas, effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., Empire Oil & Refining Co., and Atlas Pipe Line Co. posted 60 cents per barrel in East Texas, but on November 3 resumed its posted price of $1 per barrel, making it retroactive to October 22.

*Magnolia Petroleum Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933) ..... $.70
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933) ..... .75
Pecos County, Yates shallow Pool (Sept. 29, 1933)* ..... .65
Jones and Fisher Counties*. See gravity table

Note—Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.

*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers. ..... (See gravity table)
Tomball (see note)* $1.15
Livingston (Sept. 29, 1933)† 1.00
Cleveland (Jan. 11, 1934) 1.00
Greta (Sept. 29, 1933) ..... .85
Refugio, light ..... (See gravity table)
Refugio, heavy (Sept. 29, 1933)‡ ..... .85
Markham and High Island ..... (See Gulf Coast gravity table)
Conroe ..... (See Conroe gravity table)
Bosco, La. (Oct. 15, 1934)§ $1.03

Note—Tomball, effective September 29, by Humble Oil & Refining Co. and October 2 by Magnolia Petroleum Co., and November 10 by Stanolind Crude Oil Purchasing Co.

*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy by Humble Oil & Refining Co. Cleveland (Liberty County) posted by Magnolia Petroleum Co. §Bosco posted by Pure Oil Co.

South Central and Southwest Texas

(See note below table)

Darst Creek ..... $.87
Mirando ..... .80
Luling (Sept. 29, 1933) ..... .75
Pettus 1.05
Salt Flat ..... .87
Lytton Springs (Sept. 29, 1933) ..... .95
Duval County (Sept. 29, 1933) ..... .80
Saxet ..... .85

Note—Effective on September 29 by Humble Oil & Refining Co. in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29, by

(Continued on Page 81)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

January 22, 1935

Taxes

The gasoline quotations given in the following tables include the 1-cent Federal tax, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank wagon or 3 cents a gallon off retail prices is permitted for purchases running between 4,000 and 10,000 gallons a month, or 4 cents a gallon off retail prices for purchase in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero- tank wagon
Denver, Colo.	18.0	20 0	5.0	13 6
Pueblo	18 0	20.0	5.0	13.0
Grand Junction	18 5	20.5	5 0	15 0
Casper, Wyo.	18.0	20.0	5.0	11.5
Cheyenne	18.0	20.0	5.0	13.0
Butte, Mont.	21.0	23.0	5.0	17.5
Billings	22 0	24 0	6 0	16.5
Helena	23 0	25.0	6.0	17.5
Great Falls	21 5	23.5	6.0	17.5
Salt Lake, Utah	21.0	23 0	5.0	16 0
Boise, Idaho	22.5	24.5	6.0	18.0
Twin Falls	22.5	24.5	6.0	18.0
Albu'que, N. M.	17.5	19.5	*6.5	13.0

*One-half cent city tax.

Effective March 1, 1934, discount to dealers with or without contract throughout Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Standard Oil Co. (Indiana)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero- tank wagon
Chicago	14 6	16.6	4.0	8.0
Decatur, Ill.	14.4	12.7	4.0	10.2
E. St. Louis	14.1	11.0	4.0	9.5
Joliet	14.5	16.5	4.0	10.2
Peoria	14.7	13.5	4.0	10.2
Quincy	15.9	14.9	4.0	10.0
Davenport, Ia.	14.2	14.0	4.0	10.1
Des Moines	14.1	16.1	4.0	10.1
Mason City	14.4	16.4	4 0	10 1
Sioux City	14.2	16.2	4.0	9.7
Duluth, Minn.	15.0	17.0	4.0	10.4
Mankato	14.7	16.7	4.0	9.5
Minneapolis	15.0	17.0	4.0	10.4
LaCrosse, Wis.	15.7	17.7	4.0	10.8
Green Bay	15.9	17.9	5.0	10.2
Milwaukee	15.8	17.8	5.0	9.0
Madison	16.0	18.0	5.0	9 9
Detroit, Mich.	15.0	17.0	4.0	10.5
Grand Rapids	14.7	16.7	4.0	10.2
Saginaw	15.0	17.0	4.0	10.5
Evansville, Ind.	16.3	14.9	5.0	10 0
Indianapolis	16.1	18.1	5.0	10.2
South Bend	16.4	18.4	5 0	9.0
Fargo, N. Dak.	15.7	17.7	4.0	11.4
Huron, S. Dak.	16.2	18.2	5.0	11 4
Sioux Falls	15.6	17.6	5.0	10.9
Kans. C., Mo.*	13.6	15.6	4.0	7.5
Springfield	13.3	15.3	4.0	8.8
St. Louis	14.2	16.2	3.5	8.7
St. Joseph*	13.6	15.6	4.0	7.8
Wichita, Kans.	13 2	15 2	4.0	7.5
Bartlesville, Ok.	15.7	18.2	5.0	9.5

*State tax 3 cents, 1-cent city tax and 1-cent federal tax.

Discounts to dealers: Undivided accounts, 3½ cents on premium and regular and 2½ cents on third grade off service station prices; divided accoun s one-half cent less than undivided. Where prices are more than 1 cent below normal, the discounts are one-half cent less than above.

Naphtha

	Tank wagon*
Oleum spirits	16.7
V.M.&P. naphtha	18.0
Cleaners' naphtha	18.0
Stanisol	18.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax nor 3 per cent retail occupational tax.

Prices f.o.b. Chicago, January 5, 1935. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Stanolex Furnace Oil in Chicago

Effective Jan. 2, 1935, f.o.b. Chicago tank wagon prices: Range oil, less than 80 gallons, 8¼ cents; 80-149 gallons, 7½ cents; 150 gallons and more, 7 cents. No. 1 (36-40 lt. stw. zero), less than 100 gallons, 8¼ cents; 100-149 gallons, 7¼ cents; 150 gallons or more, 6¾ cents; No. 2 (30-34, stw. zero), less than 150 gallons, 7¾ cents; No. 3 (22-26, zero), less than 150 gallons, 7 cents; No. 4 (12-16 zero), less than 400 gallons, 7 cents; viscosity of No. 4, 35 at 100° F.; No. 5, less than 400 gallons, 5¾ cents. For deliveries of more than stated quantities of Nos. 2, 3, 4 and 5, deduct 1 cent.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero- tank wagon
Atlanta, Ga.	19.0	21.0	7.0	15.0
Augusta	18.0	19.0	7.0	15 0
Macon	19.0	21.0	7.0	15.0
Savannah	17 5	19.5	7.0	14.0
Birm'ham, Ala.	19.5	21.5	8.0	14.5
Mo ile	17.0	18.0	8.0	13.0
Montgomery	18.5	19.5	8.0	15.5
Jackson, Miss.	18.5	20.5	7.0	13.0
Vicksburg	18.0	19.5	7.0	14.5
Jack'ville, Fla.	18.0	20.0	8.0	11.5
Miami	18.0	20.0	8.0	13.5
Pensacola	19.0	21.0	8 0	13.5
Tampa	18.0	20 0	8 0	12 5
Lexington, Ky.	15.5	17.5	6.0	11.5
Covington	14.5	16 5	6 0	12.5
Louisville	15.5	16.5	6.0	12.0
Paducah	14.5	15.5	6.0	12.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 3 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1 cent state tax; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline; in Florida an inspection fee of one-eighth cent on kerosene and gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1 cent city tax.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero- tank wagon
Dallas, Tex.	13.0	14.0	5.0	7.0
Fort Worth	12.0	14.0	5.0	7.0
Houston	14.0	16.0	5.0	7.0
San Antonio	16.0	18.0	6 0	9 5
El Paso	18 0	20 0	5 0	12.0
Muskogee, Ok.	16.0	18 0	5.0	7 5
Okla. City	16.0	18 0	5 0	7.5
Tulsa	16.0	18.0	5.0	7.5
Ft. Smith, Ark.	14.1	16.5	5.0	9.0
Little Rock	16.6	19.0	7.5	9.0
Texarkana	14.0	16 0	5 0	7.0

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero- tank wagon
Atl'tic City, N.J.	12 9	16.4	4 0	9.0
Newark	12.2	15.7	4 0	8 5
Annapolis, Md.	14.5	18.0	5.0	10.0
Baltimore	14.0	17.5	5 0	8.5
Cumberland	15.0	18.5	5.0	12.7
Wash'g'n, D. C.	12.0	15 5	3 0	11.5
Danville, Va.	16.5	20.0	6.0	12.9
Norfolk	15.0	18.5	6.0	11.3
Petersburg	15.5	19.0	6.0	11.4
Richmond	15.5	19.0	6.0	11 7
Roanoke	16 5	20.0	6.0	12.9
Charla'n, W.Va.	15.0	18.5	5.0	12.6
Parkersburg	14.5	18.0	5.0	11.2
Wheeling	14.0	17.5	5.0	12.2
Charlotte, N. C.	16.0	19.0	7.0	13.5
Hickory	16.5	19.5	7 0	13.7
Mt. Airy	17.0	20.0	7.0	13.8
Raleigh	16.5	19.5	7.0	13.3
Salisbury	16.5	19.0	7.0	13.6
Charleston, S.C.	15.2	18.7	7.0	11.3
Columbia	16.5	19.5	7.0	13.2
Spartanburg	17.4	20.9	7.0	13.5

Effective October 23, tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero- tank wagon
Omaha	15 9	17 9	5.0	10.0
McCook	16.6	16.9	5 0	10.7
Norfolk	16.3	18.3	6.0	10.4
North Platte	16.7	17.7	5.0	10.0
Scottsbluff	17.4	19.4	5.0	11.5

Note: Discounts to dealers; where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2½ cents; Standard Red Crown, 3½ cents; Red Crown Ethyl, 3½ cents.

Where service station gasoline prices are below normal, resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Corwn, 3 cents; Red Crown Ethyl, 3 cents. Discounts to consumers for tank wagon deliveries covered only by Standard Commercial Consumers Contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero- tank wagon
N. Orleans, La.	14.5	17.5	‡8.0	9 0
Ba.on Rouge	15.2	18.7	†7.0	12.0
Alexandria	16.1	19.6	†*8.0	12.0
Lafayette	16.3	19.8	‡*8.0	12.0
Lake Charles	16.2	19.7	†*8.0	12.0
Shreveport	14.0	17.5	†7.0	12.0
Knoxville, Tenn.	18.7	22.2	8.0	13.5
Memphis	17.0	20 5	8.0	10 5
Chattanooga	18 0	21.5	8.0	11.0
Nashville	18.0	21.5	8.0	12.0
Bristol	17.0	20.5	8.0	14.0

*Includes city tax of 1 cent.
‡Includes 2-cent parish tax. †Includes 1-cent parish tax.

Effective October 23, tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at dealer price less one-half cent.

Louisiana kerosene prices include 1-cent state tax.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline: Tank wagon†	Gasoline: Posted retail	Gasoline: Incl'ds tax of	Kero- tank wagon
San Francisco	16 5	18.5	4.0	12.5
Los Angeles	15.5	17.5	4.0	12.5
Fresno, Cal'f.	17.0	19.0	4.0	14.0
Phoenix, Ariz.	20.0	22 0	6 0	‡16.0
Reno, Nev.	19.0	21.0	6 0	15.5
Portland, Ore.	19.0	21.0	6.0	13.5
Seattle, Wash.	19.0	21.0	6.0	13.5
Tacoma	19.0	21.0	6.0	13.5
Spokane	22.0	24.0	6.0	18.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.
†Prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.
‡Includes 5-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero- tank wagon
Phil'delphia, Pa.	14.0	16.0	4.0	9.0
Pittsburgh	15.0	17.0	4.0	10.0
Allentown	14.5	16.5	4.0	10.0
Erie	12.5	12.5	4.0	9.0
Scranton	15.0	17.0	4.0	10.0
Altoona	15.0	17.0	4.0	10.0
Dover, Del.	14.5	16.5	4.0	10.0
Wilmington	14.5	16.5	4.0	9.0
Springf'd, Mass.	13.0	16.5	4.0	8.5
Worcester	13.0	16.5	4.0	9.0
Hartford, Conn.	12.0	15.5	3.0	8.5
New Haven	12.0	15 5	3.0	8.5
Providence, R.I.	11.5	15.0	3.0	8.5

Note—Tank wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

Canada*

Imperial 3-Star Gasoline

IMPERIAL OIL, LTD.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero- tank wagon
Hamilton, Ont.	†22.0	25.0	6.0	17.5
Toronto, Ont.	†22.0	25.0	6.0	17.5
Brandon, Man.	30.3	33.3	7.0	21.8
Winnipeg, Man.	28.7	31.7	7.0	20 2
Regina, Sask.	29.0	32.0	6.0	21.5
Saskatoon, Sask.	31.8	34.8	6.0	24.3
Edmonton, Alta.	31 2	34.2	6.0	23.7
Calgary, Alta.	28.5	31.5	6.0	21 0
Vancouver, B.C.	27.0	30.0	7.0	24.0
Montreal, Que.	24.0	27.0	6.0	17.0
St. John, N.B.	26.0	30.0	8.0	19.5
Halifax, N. S.	26.0	30 0	8.0	19.5

*Imperial gallon used in Canada. †Governed by service station price.

Maritime provinces, all dealers 4 cents off service station price. All other provinces open dealers 3 cents per gallon off service station price (except Toronto and Hamilton cities which are—open dealers 2½ cents off service station price) 1 cent additional to 100 per cent accounts.

New York and New England

SOCONY-VACUUM CO., INC.

	Gasoline: Posted dealer	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero- tank wagon
Albany, N. Y.	13.5	17.0	4.0	8.5
Met. New York	13.0	16.5	4.0	8.75
Br'klyn, Queens	13.0	16.5	4.0	8.5
Buffalo	10.5	13.0	4.0	8.0
Rochester	13.5	17.0	4.0	8.0
Syracuse	13.5	17.0	4.0	8.75
Boston, Mass.	13.0	16.5	4.0	8.5
Portland, Me.	15.0	18.6	5.0	8.75
Manch't'r, N.H.	12.5	14.5	5.0	9.0
Burlington, Vt.	16.5	20.0	5.0	9.0

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero- tank wagon
Ohio points	15.5	17.5	5.0	*13.5

*Includes state tax of 1 cent, effective July 22.

Retail Price Changes

Regular-Grade Gasoline and Kerosene

Standard Oil Co. of Kentucky, January 2, advanced tank wagon kerosene 1 cent in Covington, Louisville, Paducah and Mobile; one-half cent in Birmingham, Montgomery, Atlanta, Augusta and Macon; 2.5 cents in Vicksburg. January 2, advanced tank wagon kerosene 2.5 cents in Jackson; January 15, reduced it 2.5 cents. January 10, reduced tank wagon gasoline one-half cent and station gasoline 1 cent in Augusta.

Standard Oil Co. of Indiana, January 12, advanced tank wagon gasoline .3 cent in St. Louis; January 14 advanced station gasoline one-half cent; January 16, advanced tank wagon gasoline 1.2 cents and station gasoline 3.2 cents.

Standard Oil Co. of California, January 17, advanced tankwagon and station gasoline 5 cents in Phoenix.

Standard Oil Co. of Louisiana, January 5, reduced tank wagon gasoline 1 cent and station gasoline 1.5 cents in New Orleans. January 11, reduced tank wagon and station gasoline one-half cent in Chattanooga. January 1, the majority of the parishes in the State of Louisiana passed ordinances levying additional gasoline taxes, resulting in an increase of 1 cent per gallon in the full posted prices of tank wagon and station gasoline in Baton Rouge, Alexandria and Lake Charles.

Atlantic Refining Co., January 9, advanced station gasoline one-half cent in Springfield. January 15, advanced tank wagon kerosene one-half cent in Hartford.

Socony-Vacuum Oil Co., Inc., January 21, advanced tank wagon and station gasoline one-half cent in Albany, Metropolitan New York, Brooklyn and Queens, Boston, Manchester and Burlington; advanced tank wagon gasoline one-half cent and station gasoline .6 cent in Portland; reduced tank wagon gasoline 3 cents and station gasoline 4 cents in Buffalo.

Magnolia Petroleum Co., January 16, reduced tank wagon and station gasoline 1 cent in Houston. January 19, advanced tank wagon and station gasoline 1 cent in Dallas and Fort Worth.

CRUDE OIL PRICE CHANGES

Stanolind Oil & Gas Co. effective January 1, 1935, posted a price of $1 per barrel in Pondera, Montana, Field.

C. W. DUKE DIES

Charles W. Duke, 44, chief gauger for the Sinclair Refining Co. died suddenly Monday at his home in Tulsa of a heart attack.

He came to Tulsa in 1919 with the Producers & Refiners Corp. and was superintendent of the pipe line department with offices in the refinery at West Tulsa. He held this position until the merger with the Sinclair Co. Before coming to Tulsa he lived at Blackwell, Okla.

NEWS FOR SALES DEPARTMENTS

D. J. Cavanaugh Retires as Pennzoil Director

OIL CITY, Pa., Jan. 21.—A 43-year association with the oil industry will be severed February 1 when Daniel J. Cavanaugh, 67, secretary of The Pennzoil Co. and director of its wholesale sales, will retire from active duties. His activities, according to announcement by the company today, will be assumed temporarily by R. A. Browne, director.

Mr. Cavanaugh's decision, prompted by ill health, was accompanied by the resignation of Miss Jane Smith, his secretary, who has been with The Pennzoil Co. 30 years, 24 of them as secretary to Charles L. Suhr, now president of the firm.

Having been associated with the Pennzoil organization since 1892, Mr. Cavanaugh will be recognized by oil men as a prominent veteran of the Pennsylvania oil industry. His reputation, in oil circles, as an authority is nation-wide, and his contacts and friendships among refiners and jobbers extend throughout the United States and Canada.

D. J. CAVANAUGH
Secretary The Pennzoil Co.

In 1892, he became bookkeeper for the Valley Oil Co., a predecessor to The Pennzoil Co. He continued with the organization in various capacities, and in 1908, with Mr. Suhr and Mr. Browne, organized the Oil City Oil & Grease Co. In 1915, he became secretary and director of The Pennzoil Co. He also has held directorships in the British-American Oil Co., Toronto, and the Consolidated Window Glass Co., Bradford, Pa.

His other activities include vice presidencies and directorships in both the First National Bank of Oil City and the Oil City Glass Bottle Co., directorships in the Oil City Red Cross, Chamber of Commerce and Community Fund Association, and membership in the Knights of Columbus, B.P.O. Elks, and Kiwanis.

Better Business Reflected in Bad Debts Decrease

Evidencing improved business conditions, Sinclair Refining Co. reports for 1934 its smallest recorded charge-off for bad debts. The percentage of bad and doubtful accounts to total sales was only ten one-hundredths of 1 per cent last year as compared to eighteen one-hundredths in 1933 and thirty-four one-hundredths of 1 per cent in 1932. The total of bad and doubtful accounts for the year was the smallest since 1926, notwithstanding the fact that the volume of sales was the largest in its history. Credit sales in 1934 were 39 per cent of the business as against 52 per cent in 1930. Average number of days required to collect an account decreased from 37 days in 1930 to 27 days in 1934.

C. L. SUHR TO TALK

Charles L. Suhr, of Oil City, Pa., president of the National Petroleum Association, will be the speaker on the Forum of Liberty broadcast Thursday night, January 24.

Mr. Suhr was invited to speak for the petroleum industry, continuing the series of talks by leaders of various industries, who have been invited to give their views on the importance of their special fields, respectively, in a national industrial program. Listeners in recent weeks have heard representatives of the rubber, dairy, foods, cosmetics, pharmaceutical, and can manufacturing industries speak on this broadcast.

Mr. Suhr is known to oil men as the "dean of refiners" in the United States. His experience in the refining business goes back more than 40 years, and he has seen the petroleum industry go through several financial crises in addition to the present readjustment.

Pump Moratorium Is Declared by Refiners

LOS ANGELES, Calif., Jan. 21.—Conditions were brought back to normal again this week when marketers signed a pump moratorium which will be in effect until January 28 and the Mohawk Oil Co. restored the price of its gasoline which recently was reduced 2 cents per gallon. The moratorium, in the solicitation of new accounts, was invoked in order to permit some of the larger companies to straighten out their secondary units and distributors and thus help stabilization of prices. Some of these secondary outlets during the past several weeks have violated the marketing agreement of the Pacific Coast Petroleum Agency.

The Mohawk's position and the reason for its action in reducing gasoline prices recently were outlined by Alfred Marsten, Jr., vice president of the company, who stated: "Our attitute is that if we are given a fair allowable we are willing entirely to submit to curtailment. Our potential production is 20,000 bbls. per day but we are curtailed to 3,000 bbls. We do not approve of a curtailment program under which we are cut 90 per cent in the face of an average of 40 per cent for other producers." The Mohawk had served notice on Upmire Pemberton that it would not curtail to the allowable set up by him unless the allotment for the field was modified.

W. T. ATKINS » » »

A TRUE pioneer in the retail marketing of petroleum products in the Mid-Continent area is W. T. Atkins, vice president in charge of marketing for the Skelly Oil Company. His experience in oil marketing dates from the days when tank wagon salesmen sold mostly kerosene, lubricating oil and axle grease, made their own demonstrations and deliveries without the aid of the modern truck and when most service stations were livery stables converted into garages with a single gasoline pump in front.

The first taste of retail selling came to W. T. Atkins at the age of 15. Arising in the early morning hours, he and a companion covered four routes in wagons to take and deliver orders for an Enid, Okla., grocery store. Next in Mr. Atkins' selling career came a job with a packing house. Buffeted about by the cut-throat methods of his older and more experienced competitors, the young salesman here learned lessons which stand him in good stead even to the present day.

Although as a salesman for the Blake Oil Company of Liberal, Kans., W. T. Atkins made an inconspicuous entrance into the oil business, he was, before long an assistant station manager for the Sinclair Refining Company. He first became associated with the Skelly Oil Company in August, 1921, when he was appointed vice president and general manager of the Community Service Station Company, a Skelly subsidiary. In April, 1923, he added to his responsibility the management of stations operated by Skelly. Then, when the retail marketing offices of the company were moved to Kansas City in September, 1924, he headed the move.

In March, 1931, both wholesale and retail marketing activities of the Skelly Oil Company were consolidated in Kansas City. Mr. Atkins was logically chosen to head the general sales department and was elected to his present position as vice president in charge of marketing.

With this abundant background of retail selling experience, all of which has served to make him "consumer-minded," it is natural that Mr. Atkins should have become a leader in retail marketing in the Mid-Continent. He has occupied an important place on code committees and in general industry marketing policy conferences. He is a member of the A.P.I. general committee, marketing division, and also a member of the Planning and Coordination Committee, and Regions 3 and 4, Marketing Committees.

Soviet Withdraws From German Retail Market

Both economic and political reasons were advanced for the action of the Soviet government in withdrawing from the retail market for petroleum products in Germany. In abandoning its own retail organization called Derop, the Soviet will dispose of its facilities to the Deutsche Benzol Verband. It is understood that Russia will supply independent oil organizations in Germany but will not compete directly in the retail markets.

Because of a lack of refining equipment, it is understood that Russia has not been able recently to supply sufficient refined products to its various marketing organizations, and to fill long-term contracts, has been buying American products to meet some of its requirements. Another reason for withdrawal, it is believed, was to avoid any possible friction with the German government. To carry on its retail operations in Germany it was necessary to place many Soviet men at retail points in Germany. The contact between these and native German marketers was feared to lead to diplomatic difficulties. The method of supply now adopted will greatly decrease the need for Soviet men in the foreign country.

Next to its marketing outlets in Great Britain, the retail division of the Soviet in Germany was the most important. It is reported that the price received for the holdings in the Reich was 4,000,000 marks, exclusive of the value of inventories, transportation facilities and a few other items.

OIL BURNERS CONFERENCE

The conference on Fuel Oil and Oil Burners will be held February 7, 8 and 9 at the University of Wisconsin, at Madison. Prof. D. W. Nelson of the university is chairman of the conference. Registration begins 10 a.m. February 7.

NO "LIVE POWER" CIRCUS

Two recent reports in the trade press that Standard Oil Co. (Indiana) is going to tour a three-ring circus over the Middle West this spring and summer as part of its "Live Power" advertising campaign are entirely unauthorized and without foundation, A. N. Steele, the company's advertising manager, stated.

ONTARIO GASOLINE TAX

TORONTO, Ontario, Jan. 19.—It has been officially stated by Hon. Mitchell F. Hepburn, premier of Ontario, that no increase will be made in the existing provincial gasoline tax of 6 cents per imperial gallon. The Quebec government some time ago foreshadowed an increase in that province from 6 cents to 7 cents, if Ontario would make the same increase.

Closer supervision of gasoline tax collection and tax rebates in Ontario is expected to increase the provincial revenue from this source by approximately $3,000,000 a year.

NEWS FOR PETROLEUM REFINERS

Gasoline Allocations by Districts Are Announced

The Planning and Coordinating Committee announces refinery gasoline production allocation by districts for February, 1935. Attention is particularly directed ot Sections X and XI which heretofore have not appeared as part of the gasoline order. The use of the particular type of questionnaire formerly authorized by Section X has been discontinued for this month.

The figures include the production of straightrun and cracked gasoline and the natural gasoline blended therewith either at refineries or terminals appear in the table below.

GASOLINE ALLOCATIONS

(Thousands of barrels)

District—	Allocation to meet current demand	Allocation for seasonal stock increase
1. East Coas:	3,977	1,239
2. Appalachian . .	1,235	219
3. Ind.-Ill.-Ken....	4,180	916
4. Okla.-Kan.-Mo..	4,041	583
5. Texas:		
a. Inland Texas	1,814	100
b. Texas Gulf Coast	5,813	688
c. East Texas..	449	None
6. Louisiana-Arkansas:		
a. La., Gulf Coast and Alabama	982	328
b. North La.-Ark. and Miss....	672	10
7 Rocky Mountain	512	150
8. California.....	5,284	362
	27,960	4,600

Total U. S.—32,560 bbls.

Bearing Corrosion Caused by Acids in the Lub Oils

By W. F. PARISH and LEON CAMMEN
Consulting Engineers, New York City

The introduction of the copper-lead type of bearings for the automotive engines has produced an entirely new set of reactions which the chemists of the industries involved have correctly ascribed to the presence of acids in the motor oils. These acids may have been placed in the lubricants, or may have been spontaneously generated in the engine system as the result of the oxidation of certain parts of the oil while working in the presence of various catalysts and with high heat.

Since, from the discussion at the S.A.E. conference on lubrication held in New York City, December 3, 1934, it seems that the fundamental mechanism of corrosion of the copper-lead bearings is not understood, the following elementary explanation is provided in the hope that it will lead to a better understanding of the proper system of prevention of this kind of corrosion.

Copper and lead do not form either an alloy or a solid solution, the lead particles being merely embedded in the copper matrix. The lead protruding to the surface of the bearing is therefore exposed to the direct attack of the oleic acid in the oil with the result that lead oleates are formed. In some, if not in all oxidized oil, acetic acid is present and this attacks the lead, forming lead acetate. Butyric acid can also be present and can form lead butyrate. All of these and probably similar compounds are not soluble in oil but they are soluble in water. The water which is present in all engine lubricating systems rapidly washes away all of the compounds that have not been removed by the slower mechanical action of the oil.

Oleic acid does not attack copper but formic acid does with the formation of copper formate. Acetic acid combines with copper forming copper acetate. But these compounds are not soluble in water and are formed only at a very slow rate.

Removing the compounds from the surfaces that have been acted upon frees such surfaces for further attack, and this makes the "pitting" that has been reported upon. This action also enormously increases the area which then can be acted upon by the various acids. Finally all of the directly involved bearing surface originally formed by the lead is removed or "eaten" away, leaving the copper surfaces to carry the load.

High Crude Freight Rates Close Regina Refinery

REGINA, Saskatchewan, Jan. 19.—A statement issued by Imperial Oil, Ltd., with reference to the recent closing of its refining plant here explains that for a year the company has been trying in every possible way to avoid closing owing to the number of men employed at the plant; but that the company could not indefinitely make more goods than it can sell. Markets for the output of the plant are restricted by the new freight rates on Mid-Continent crude, by the competition of new refineries recently established, and by the reduction in purchasing power due to low grain prices and drought.

When the Regina refinery was built in 1916, at a cost of $5,000,000, prices were high, and it was the only refinery in Saskatchewan. Its products could be shipped long distances and still compete with the output of other refineries. With the increase of 11.6 per cent in the crude oil freight rate, the company finds that part to the west formerly served from Regina can be served more economically from the Calgary refinery, and part of the area to the east from the Sarnia refinery which can deliver its output by lake boats to the head of navigation.

What other measures may be taken will be determined by the course of business in 1935. When the large stocks on hand at Regina are reduced to dimensions suitable to the area to be served under the new conditions, it is likely operations will be resumed on a restricted basis.

Egloff Conducts Lecture Series on Oil Refining

Dr. Gustav Egloff of the Universal Oil Products Co. has begun a January and February series of lectures on various phases of the refining industry. Dr. Egloff's schedule includes the following four addresses:

January 17—Northwest Petroleum Association, Minneapolis: "Modern Products from Petroleum."

February 7—Conference on fuel oil and oil burners, University of Wisconsin, Madison: "Production, Competitive Users and Future Supply of Fuel Oil."

February 7—Northeast Wisconsin section of the American Chemical Society, Appleton, Wis.: "The Cracking Process and Its Products."

February 14—Ohio Petroleum Marketers Association, Inc., Columbus, Ohio: "Modern Gasoline and Lubricants."

Tide Water Negotiating to Buy Simms Properties

Negotiations for purchase of Simms Oil Co. with headquarters in Dallas by the Tide Water Oil Co. of New York were reported, placing the possible consideration as high as $12,000,000.

The lowest figure mentioned in connection with the proposed transaction was $9,000,000, which was given as the possible cash price. All producing, refining and transporting properties of the Simms and all wholesale outlets would be included in the deal. The company recently sold its retail outlets to the Sinclair Refining Co., withdrawing from the retail end of the marketing business.

Simms owns valuable producing properties, both in East Texas and in the Yates pool in West Texas. Its East Texas holdings totalled 835 productive acres and 76 producing wells.

Altogether the Simms has a total of more than 800 producers scattered over Arkansas, Louisiana, Oklahoma, Kansas, East Texas, West Texas, North Texas, Southwest Texas and Central Texas, with production averaging around 8,000 bbls. a day. The company operates two refineries, one in West Dallas and the other in Smackover, Ark.

Government Contracts on Salt Creek Oil Awarded

Award of a one-year contract for the sale of the Government's royalty oil from the Salt Creek, Wyoming, oil field, to the White Eagle division of the Socony-Vacuum Oil Co., Inc., and the Sinclair-Wyoming Oil Co. was announced January 17 by Secretary of the Interior Harold L. Ickes. The contracts were effective January 1, 1935, and provide that the two companies purchase the royalty oil at private sale for one year at a bonus of 5 cents per barrel. It also provides that the oil companies post a corporate surety bond in the sum of $200,000 to insure full and complete compliance with the terms of the contract.

Bids were originally called for on the Salt Creek Field oil on October 31, for one, two, or three-year periods, and in response one bid was received and publicly opened on December 10. This bid was made by the White Eagle Oil Corp. and Sinclair-Wyoming Oil Co. which offered to purchase the royalty oil for a three-year period at a bonus of 5 cents per barrel above the highest field price for oil of equal or lower gravity in Oklahoma and Kansas, or Wyoming, whichever was the higher.

Upon examination of this bid, Secretary Ickes decided that it would not be in the public interest to dispose of the royalty oil for a three-year period at the bonus offered by the bidder.

Accordingly the bid was rejected and thereafter the secretary negotiated with several substantial users of Wyoming crude oil, inviting proposals for one or two-year periods. These negotiations again resulted in only one proposal being received, that of the White Eagle Oil Corp. and Sinclair-Wyoming Oil Co., which has received the contract for one year at a bonus of 5 cents a barrel.

Although the bonus in the new contract is substantially lower than the bonus of 22¼ cents in the contract dated December 12, 1931, with Producers & Refiners Corp., which contract expired on December 31, 1934, Secretary Ickes stated that he hoped that stabilized conditions in the petroleum industry at the close of 1935 will enable the Government to dispose of its royalty oil at a substantially higher price.

Investigations of crude oil prices and marketing conditions in the Salt Creek area indicate that oil may now be purchased at the posted market price without an additional bonus payment, and since this oil is available the purchasers are apparently unwilling to offer any substantial bonus for the Government's royalty oil.

Decisions Given on Gasoline Allocation Appeals

The Refinery Board of Review, which held its regular monthly session on Wednesday, January 9, 1935, in Washington, D. C., for the purpose of reviewing appeals from decisions of the Allocating Authorities fixing January gasoline production quotas, reported the following appeals and decisions rendered.

The Board also announced that its next monthly session will be held in Washington, D. C., on Wednesday, February 6, 1935, which is the final date that appeal from February fixed quotas may be perfected and presented before the Board for decision at that session.

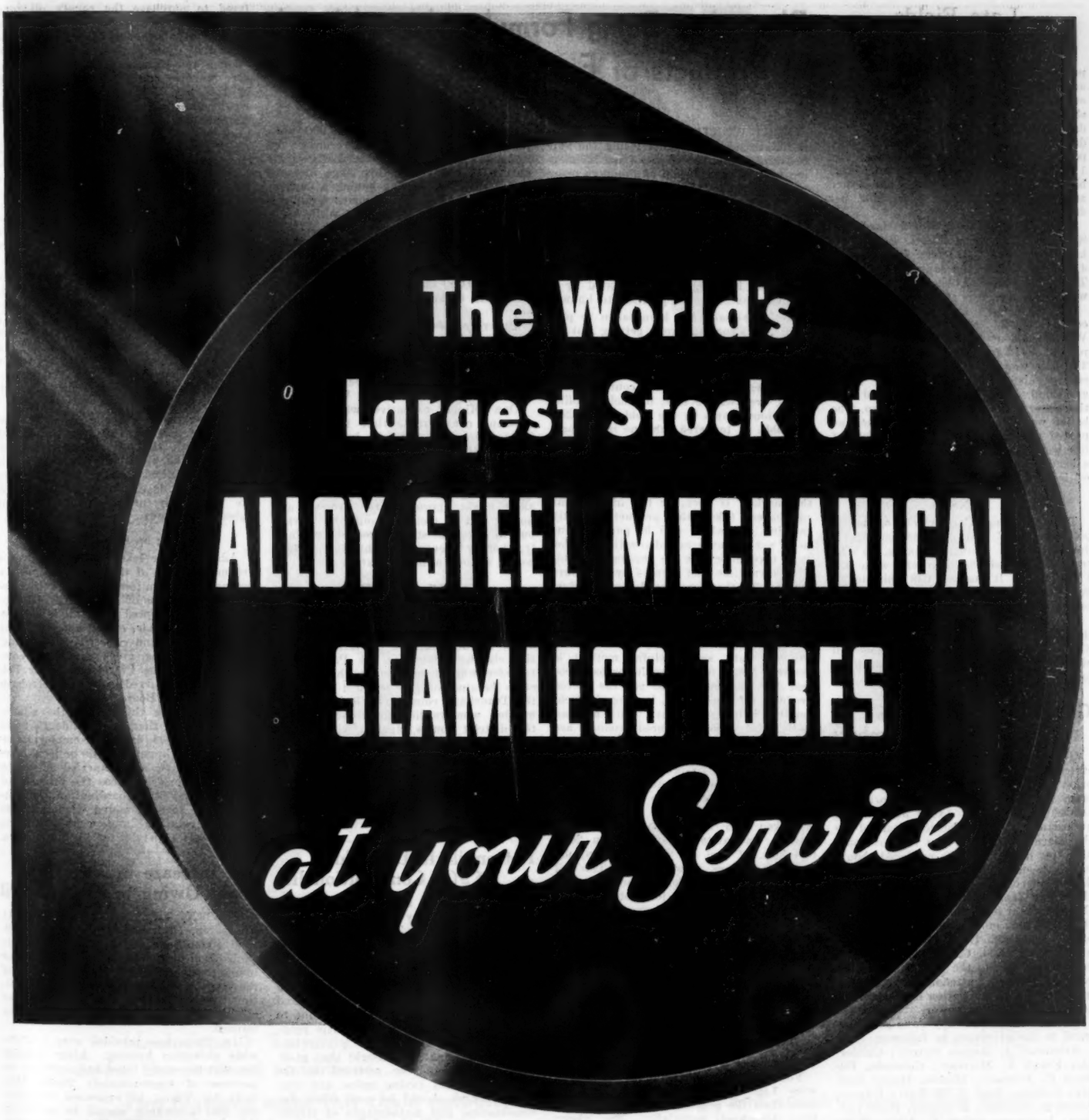
Appellant	District No.	January allocation barrels	Increases requested barrels	Increases granted barrels
The National Refining Co.	4	110,725	4,275	.....
The Dickey Oil & Refining Co.	4	.....	.....	(*)
Phillips Petroleum Co.	4	333,547	58,453	.....
Phillips Petroleum Co.	5-A	696,863	93,137	.....
Cushing Refining & Gasoline Co.	4	35,000	30,000	15,000
White Star Refining Co.	3	197,802	28,198	28,198
Continental Oil Co.	1	111,000	20,283	.....
Continental Oil Co.	5-A	80,675	7,872	.....
Utah Oil Refining Co.	7	103,930	8,070	8,070
Sinclair Refining Co.	3	512,507	60,993	60,000
Sinclair Refining Co.	4	332,581	7,419	.....
Sinclair Refining Co.	5-A	93,500	10,000	.....
Sinclair Refining Co.	5-B	552,324	47,676	40,000
Standard Oil Co. of New Jersey	1	1,240,000	241,000	.....
Shell Petroleum Corp.	3	736,115	88,885	.....
Shell Petroleum Corp.	6-A	219,000	46,000	46,000
Corpus Christi Refining Co.	5-B	6,000	42,100	.....
Gulf Refining Co.	5-B	1,038,060	53,940	40,000
Pan American Refining Corp.	5-B	324,045	125,955	90,000
Crown Central Petroleum Corp.	5-B	105,611	42,389	.....
Magnolia Petroleum Co.	5-B	809,960	226,040	75,000
Associated Oil Co.	3	299,923	59,177	52,500
Ashland Refining Co.	3	58,935	11,065	11,065
Marathon Oil Co.	5-A	48,282	8,518	8,518
Mid-Continent Petroleum Corp.	4	420,430	80,000	80,000
P. C. Chapa Refining Co.	5-A	700	600	(†)
The Pure Oil Co.	3	155,805	9,195	9,195
The Pure Oil Co.	5-B	.....	.....	(*)
Tide Water Oil Co.	1	682,000	88,000	.....
Shell Oil Co.	3	774,577	50,000	44,500

* Withdrawn.
† Decision postponed until February session.

CHICAGO OIL MEN'S CLUB

CHICAGO, Jan. 21.—The first class in its course in petroleum products was attended by 40 members of the Chicago Oil Men's Club last night. Sources and types of crude oils, constituents and adaptability to various uses was the topic for the first lecture and general discussion.

Classes will be held every Tuesday evening for 18 weeks. J. Krawets, of the Phoenix Chemical Laboratory, Chicago, will conduct the classes. Other subjects to be treated are: Terminology of the petroleum industry; basic principles of refining; natural gasoline and other gasolines and other petroleum products.



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Late Fields

OKLAHOMA

In addition to the 14 wells on which potentials were taken in the Fitts Pool, and mentioned on Page 61, Moore and others' No. 1 Akers, NE Section 36-2-6, showed a potential of 5,119.56 bbls. per day; Louall Drilling Co.'s No. 2 Harden, NW Section 30-2-7, 4,330.56 bbls. per day, and Blackstock and others' No. 1 Craddock, SE Section 25-2-6, 1,225 bbls. per day. The 17 wells tested had an average potential of 3,551 bbls. per day.

Deep Rock Oil Co.'s No. 2 Harden, C SW SE NE Section 30-2-7, Fitts Pool, had Bromide at 3,975 feet, first sand at 4,095 feet and second sand at 4,180 feet. The well flowed 225 bbls. in one hour and was then shut in as storage was filled.

Marathon Oil Co.'s No. 1 Gilbert, NE cor. Section 24-22-2e, Noble County, had Wilcox sand at 4,111 feet and set 6-inch pipe at 4,472 feet, total depth 4,480 feet. The hole was bailed down 2,100 feet, the recovery being a mixture of oil, water and mud. The hole quickly filled and thereafter could not be bailed down. The bailer was run to the bottom. The line parted and the bailer and 4,000 feet of line were lost. On Tuesday the well made a head of oil, and was then shut in. The oil is 40 degrees in gravity.

KANSAS

Twin Drilling Co., which opened a pool in C SW NW SW Section 13-17-9w, Ellsworth County, Kansas, in December, acidized the discovery well, No. 1 Rolfe, and it pumped 678 bbls. in 14 hours. The Stanolind Pipe Line Co. is laying a line to the well.

Boyle and others have a failure in their test in Rush County, C SW SW SE Section 8-19-16w. It was a hole full of water from Siliceous lime at 3,940-46 feet and will be abandoned.

Governors of Oil States Honorary A.P.I. Members

Governors of the 22 oil-producing states have been invited to become honorary members of the American Petroleum Institute. The invitation was extended by President Axtell J. Byles in accordance with a decision reached by the board of directors that the governors of states in which oil is produced should have an opportunity to participate in discussions of the board and to learn of the many factors influencing trends in the petroleum industry. Until the present there has been only one honorary member of the Institute. He is Mark L. Requa, of San Francisco, Calif., federal oil administrator during the World War. The position permits attendance at board meetings and participation in discussions, but grants no voting power.

The invitations already have gone forward to the governors as follows:

Arkansas, J. Marion Futrell; California, Frank F. Merriam; Colorado, Edward C. Johnson; Illinois, Henry Horner; Indiana, Paul V. McNutt; Kansas, Alfred M. Landon; Kentucky, Ruby Laffoon; Louisiana, Oscar K. Allen; Michigan, Frank D. Fitzgerald; Mississippi, Mike S. Conner; Missouri, Guy B. Park; Montana, Frank E. Cooney; New Mexico, Clyde Tingley; New York, Herbert H. Lehman; Ohio, Martin L. Davey; Oklahoma, E. W. Marland; Pennsylvania, George H. Earle; Tennessee, Hill McAllister; Texas, James V. Allred; Utah, Henry H. Blood; West Virginia, Herman J. Kump; Wyoming, Leslie A. Miller.

PETROLEUM ACCOUNTANTS

The regular January meeting of the Petroleum Accountants Society will be held at the Mayo Hotel on Thursday, January 31. Clarel B. Mapes, secretary of the Mid-Continent Oil and Gas Association, will speak on the "Old Age Pension Plan," and W. K. Carr, also of the Mid-Continent Oil and Gas Association, will discuss the "Unemployment Insurance Plan." The discussions will be preceded by a short entertainment.

Plans Are Being Formulated to Absorb Products of East Texas Gradually

By L. E. BREDBERG

FORT WORTH, Tex., Jan. 21.—With the Railroad Commission losing the suit restraining the commission from interfering with transportation of products prior to December 10, and with tank car movements gaining nearly each day during the past week, it looks as if the commission and Attorney General's Department have an immediate job on their hands to prevent overproduction from gaining more than the present estimated 30,000 to 40,000 bbls. per day, as stated by a company executive in position to know.

Action already has been taken to prevent the situation from getting out of hand. One large independent refiner in Dallas is reported as offering to purchase the gasoline in storage that has been "legalized" by the court action. There are 162,000 bbls. of such gasoline at various plants in the field, with 120,000 bbls. of tendered gasoline in storage.

Twelve or fourteen ot the larger refiners in the field are considering a plan to take the stored products in an effort to prevent them from being dumped on the market. If they, or the independent purchaser, takes the products, mostly gasoline, the whole will be parceled out so as not to cause any disruption. Major units may enter into the purchasing plan. Five days' time was granted by the court for gauging the stored products, and during this time the Attorney General's Department is planning an appeal.

None of the stored products has been moved yet, and there is a possibility none will be until some helpful method is evolved. Many feel it would probably be best for the industry to get the stored products off the market, leaving the field and the industry to start "with a clean slate." But while the stored products are being parceled out over a period of time, the commission's men will have to be extremely diligent to prevent some of the refiners from running more "hot" oil to their plants and adding to the gasoline.

The fuel oil in storage is expected to be taken over by the railroads in the district, one already having taken 200,000 bbls. of fuel oil "freed" by injunction proceedings a week ago. This oil was not to be sold for further refining, but was to be used in locomotives. More refiners are expected to bring suit to obtain permission to move refined products stocks.

During the past week tank car shipments of products have been increasing nearly every day. For the previous week there were only 673 cars of products, mostly gasoline, moved out of the field. On January 15 there were 212 cars shipped, on January 16, 284 cars, 26 of which were untendered, and on January 17, 261 cars were shipped.

For the week ending January 13, there were 1,027 cars shipped, or 363 cars more than the previous week. Shipments have increased materially. The above movements took place before the decision was rendered against the commission.

Shipments of refined products for the week ending January 13, were as follows:

	Cars	Gallons
Gasoline	292	2,376,975
Fuel oil	196	1,909,355
Casinghead gasoline	136	1,150,165
Topped crude	117	1,051,625
Distillate	82	673,225
Kerosene	50	403,930
Residuum	58	489,850
Gas oil	56	469,330
Crude oil	39	342,140
Total	1,027	

Comparing these shipments with the previous week's movements of refined products shows but a small increase, 22 cars in gasoline shipments. But "topped crude" has again jumped into prominent position on the list, gaining by 109 cars over the previous week. Casinghead gasoline gained only 28 cars, but fuel oil increased by 96 cars. Shipments of the latter product were no doubt due to movement of part of the 200,000 bbls. previously released by a court order, the oil going to a railroad for use in locomotives, consequently this large increase cannot be construed as having a dangerous angle. Crude oil shipments jumped from 15 to 39 cars this week, while kerosene nearly doubled.

Four more refineries started up in the field during the past week, daily runs to plants increasing to 33,360 bbls., or around 10,000 bbls. per day. Ten plants were said to be operating on untendered oil.

But regardless of the increase in shipments, gasoline jumped a couple of cents in Dallas and Fort Worth. "Hot" gasoline could be purchased at the East Texas plants for 1¾ cents per gallon, or 2¾ cents trucked to Fort Worth.

One refinery executive, who has been devoting considerable time to the East Texas situation, and who has been connected with the purchasing plan formerly worked out by the major units to purchase distress gasoline in the field, stated that he felt the situation not as grave as it might appear at the present, and hoped that a method would be worked out to take the stored products gradually, thereby preventing "dumping," which would relieve a bad situation.

Cases Transferred

Thirteen oil cases have been transferred from the Court of Civil Appeals for the Sixth Supreme Judicial District, Texarkana, to the Court of Civil Appeals for the eighth district at El Paso. This transfer was made along with 55 other cases because of the crowded docket of the Texarkana court. The Railroad Commission won verdicts in these cases in the district courts, against violators in the East Texas Field, and the defendants appealed to the higher court. The charges involve operators for receiving untendered oil and failure to make reports, overproducing, bypassing and committing other infractions against the commission's orders.

Pettengill Is Doubtful of 9(c) Constitutionality

(Continued from Page 8)

during the week by Senator Capper of Kansas. "This tax," Mr. Capper said, "which is generally regarded as discriminatory, unjust and outrageous, ought to be repealed. It invades a field that should be left to the states, which already have loaded the automobile and truck owners with taxes that amount to a 25 percent annual tax on their property," he continued.

It is the Senator's thought that gasoline taxes should be reserved to the states and local taxing units, and that those returns should be used solely for construction and maintenance of streets and highways, which he believes the motorist should pay for.

Salt Creek Royalty

Secretary of the Interior Harold L. Ickes announced award of a contract for the sale of the Government's royalty oil from the Salt Creek, Wyoming, oil field, to the White Eagle Oil Corp. and Sinclair-Wyoming Oil Co., for a one-year period beginning January 1, 1935.

The contract provides that the White Eagle Oil Corp. and Sinclair-Wyoming Oil Co. purchase the royalty oil at a private sale for one year at a bonus of 5 cents per barrel. It also provides that the oil companies post a corporate surety bond in the sum of $200,000.

Bids were originally called for on the Salt Creek Field oil on October 31, for one, two, or three-year periods, and in response one bid was received and publicly opened on December 10. This bid was made by the White Eagle Oil Corp. and Sinclair-Wyoming Oil Co. which offered to purchase the royalty oil for a three-year period at a bonus of 5 cents per barrel above the highest field price for oil of equal or lower gravity in Oklahoma and Kansas, or Wyoming, whichever was the higher. Upon examination of this bid, Secretary Ickes decided it would not be in the public interest to dispose of the royalty oil for a three-year period at the bonus offered. Accordingly the bid was rejected and the Secretary negotiated with several substantial users of Wyoming crude oil, inviting proposals for one or two-year periods. These negotiations again resulted in only one proposal being received, that of the White Eagle Oil Corp. and Sinclair-Wyoming Oil Co., which has received the contract for one year.

Although the bonus in the new contract is substantially lower than the bonus of 22¼ cents in the contract dated December 12, 1931, with Producers & Refiners Corp., which expired on December 31, 1934, Secretary Ickes hoped stabilized conditions in the industry at the close of 1935 will enable the Government to dispose of its royalty oil at a substantially higher price.

Investigations of crude oil prices and marketing conditions in the Salt Creek area indicate that oil may now be purchased at the posted market price without an additional bonus payment, and since this oil is available the purchasers are apparently unwilling to offer any substantial bonus.

Ruling on Small Towns

Administrator Ickes has disapproved a recommendation of the Planning and Coordination Committee that marketing operations in towns of less than 2,500 population be exempted from all labor provisions of the code, except those relating to child labor and collective bargaining. Disapproval was given on the recommendation of the Petroleum Labor Policy Board, concurred in by the Petroleum Administrative Board.

In explaining this action the administrator stated that the President's order of May 15, 1934, exempted employers engaged locally in retail trade or local service trades, and also canceled minimum price provisions, whereas the proposal of the Planning and Coordination Committee would have exempted wholesalers as well as retailers. and would have retained price stabilization provisions.

No Increase in Texas Owing to Released Oil

AUSTIN, Tex., Jan. 21.—Ernest O. Thompson, chairman of the Texas Railroad Commission, said today this State probably would not receive an increase in oil production next month because of the court decision here Saturday permitting the movement of a large quantity of oil products on which tenders had been refused.

Mr. Thompson presided over a statewide proration hearing. After pointing out that Secretary Ickes had agreed to an increase of approximately 24,000 bbls. daily for Texas, he expressed the opinion that allowance should be made for the placing on the market of the products released by the court ruling.

MAGNETIC STORM

U. S. Coast and Geodetic Survey, Tucson, Ariz., observatory report a moderate magnetic storm at 5 p.m. (C. S. T.) on January 16th, and ended at 8 a.m. (C. S. T.) January 18th. Telegram follows:

"Storm began sixteenth. Twenty-three. Moderate."

"Storm ended eighteenth. Fourteen."

HITE GROVER DIES

Hite Grover, aged 27, who has been associated with the Quaker State Oil Refining Corp., at Los Angeles, Calif., died January 21, in Portland, Ore., after an appendectomy. The body was taken to Los Angeles for interment. Mr. Grover was a son-in-law of R. A. Broomfield, president of the Barnsdall Oil Co. of California.

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NEWS FROM FOREIGN LANDS

MEXICO

With an announcement last week that officials and employes of the Mexican Eagle Oil Co. (Shell) had agreed to submit their employment difficulties to the Federal Board of Arbitration, it is believed that a basis has been established for ending a long drawn out strike. The situation became serious recently when sympathetic strikes of employes spread to include employes of the Pierce Oil Co. S. A. (Consolidated Oil Corp.) and Huasteca Petroleum Co. (Standard Oil Co. of New Jersey).

These strikes threatened to tie-up refinery and marketing operations. This caused the Ministry of National Economy last week to issue decrees temporarily suspending all import duties on gasoline. If necessary the government plans to import gasoline and distribute it through companies not involved in the strikes. General Francisco J. Mujica, head of the Ministry of National Economy, issued the following statement in connection with the import decree:—

"The public well knows the difficult situation in the Federal district and other important cities of the republic owing to the lack of gasoline and lubricants as well as a scarcity of other petroleum derivatives used by industries and for public services.

"As this state of affairs was daily becoming more acute as a result of the strike movement, involving a number of petroleum companies and preventing production or distribution, the Federal Executive has found it necessary to take emergency action to prevent the grave consequences that might develop from a general stoppage of transportation and other activities.

"Considering gasoline an article of public consumption and a prime necessity—and there are legal precedents for drastic action when it is a question of the life and tranquility of the country—it is hereby decreed that the importation of gasoline shall be free of all duty. This will doubtless re-establish normalcy at the places affected.

"To avoid the speculation that might follow government intervention, the Federal Executive has resolved that the Minister of National Economy shall be the importer and distributer of said gasoline.

"The government does not desire to injure the interests either of the workers or the oil companies affected by the strikes and has decided that its activities shall be effected in such a manner as not to interfere or impede the negotiations for a legitimate settlement."

GERMANY

The development activities of the Gewerkschaft Elwerath, largest producer in Germany, in 1934 was mostly devoted to operations in the Nienhagen Salzstock territory near Celle, in Hanover. Further determinations of the oil deposits in that area have been made by numerous new tests. The increased production, particularly during the past few months, is evidence that the oil deposits being located further eastwards are in nowise behind those drilled in 1933 in productivity. The Gewerkschaft Elwerath's production amounted to 116,000 tons in 1933, and the total yield from the Nienhagen Field was 145,000 tons. During the first 10 months of 1934 the company produced approximately 110,000 tons.

Numerous wells were sunk in 1934 to depths of 3,000 to 6,400 feet with modern rotary outfits. The extraordinary progress achieved in the technical development of drilling equipment and in the machinery for operating it was especially notable in 1934, and the depths reached show a quite substantial advance over 1933 operations.

The Gewerkschaft Elwerath participated most enthusiastically in the drilling program outlined by the German government, carrying on operations, on its own account and jointly with other oil enterprises, on its remaining concessions located outside of the Nienhagen territory, in north Germany, Thuringia and Brunswick. Even these exploratory tests were done with the most modern type of equipment and some of them have already yielded valuable data concerning the character of the subsoil.

The technique of producing operations has been adapted to the prevailing conditions. Deposit yielding a large amount of loose sand, the operation of which by means of the pump occasioned unusual difficulties, were produced by the gas-lift process and gave favorable results.

Along with this technical activity there has been such an expansion in the use of the natural gases produced in the Nienhagen Field that the method hitherto employed for extracting gasoline from the gas by means of activated carbon is now to be extended to obtain propane and butane. The use of these products as fuels as well as for heating and lighting, in which great advances are noted abroad, is being taken up on a considerable scale also in Germany.

The various accessory equipment—tank installations, oil purificaton plants, boiler outfits, loading facilities and shops—has also undergone a substantial expansion over the past year.

The following figures give the production in the Nienhagen Field and in the whole of Germany:

Month (1934)—	G. E. production (tons)	German production (tons)
January	9,254	20,756
February	8,450	18,799
March	9,134	21,728
April	10,202	24,153
May	10,372	22,729
June	10,503	24,640
July	12,159	28,735
August	13,006	30,422
September	11,618	27,338
October	13,495	.....
Total	108,194	219,301

CZECHOSLOVAKIA

There are now 5,591 gasoline pumps in operation in Czechoslovakia, according to a report of the Department of Commerce. In 1927 there were 900 pumps. The report explains that the present installations are more than are required to serve the trade. Recently the demand for motor fuels has greatly decreased due to the heavy taxes which have brought higher prices.

ITALY

Changes have been made by the Italian government over the past month so that smaller quantities of lubricating oils can be imported into that country. The changes provide that the maximum quantity of lubricating oils which may be imported in one shipment without permit is 200 kilos with a maximum of 1,500 kilos for one month. The minimum amount of lubricating oils for which a general permit import license may be secured is established at 1,500 kilos monthly.

Another decree provides for increased sales taxes on certain residual oils. The tax is increased from 30 to 45 lire per quintal on fuel oils having a specific gravity of from 0.85 to 0.80 and from 10 lire to 20 lire per quintal on fuel oils with a specific gravity of over 0.88. The sales tax of 0.40 lire per quintal on residual oils with a specific gravity of not less than 0.9 to be used directly as fuel in boilers or furnaces is unchanged. The two grades of fuel oils for which the tax will be increased are generally used as Diesel fuels, the consumption of which has materially increased over the past year.

DUTCH WEST INDIES

The islands of Curacao and Aruba of the Dutch West Indies group off the coast of Venezuela are increasing rapidly as refining centers according to the latest available reports covering imports of crude petroleum and exports of refinery products. Two of the world's largest refineries are located on these islands. The plant of Curacaosche Petroleum Industrie Maatschappij (Royal Dutch-Shell) at Willemstad, Curacao, with a rated crude oil capacity around 165,000 bbls. daily has been one of the largest refineries of the petroleum industry for several years.

On the Aruba Island, Lago Petroleum Corp. (Standard Oil Co. of New Jersey), through a subsidiary, has increased the capacity of its refinery formerly owned and operated by the Pan American Petroleum & Transport Co. This refinery now has a rated crude oil capacity of 150,000 bbls. daily. The Arend Petroleum Co., subsidiary of the Canadian Eagle Oil Co., Ltd. (Shell) also has a 20,000-bbl. topping plant located on the Aruba Island.

Official reports show that the first nine months of 1934 a total of 79,900 bbls. of crude oil was imported by the refineries located on these two islands. All but 634,000 bbls. of this total came from Venezuela. The 634,000 bbls. were imported from Colombia. Subtracting the crude oil that was re-exported amounting to approximately 6,135,000 bbls. and the indicated crude runs to stills the first nine months of 1934 averaged 273,000 bbls. daily. This is an increase of 40,000 bbls. daily over the average for the same period in 1933.

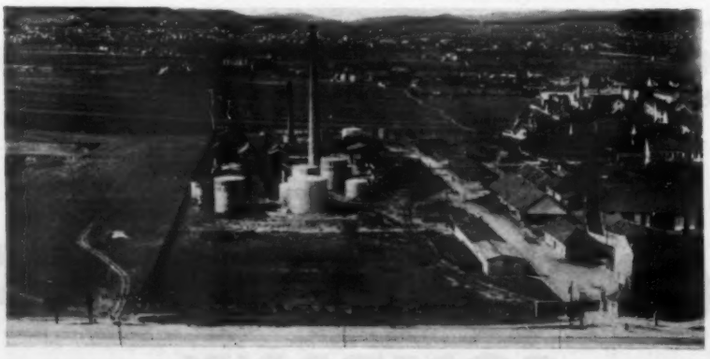
As shown in the accompanying table exports of gasoline Diesel oil and fuel oil materially increased in 1934 due to these enlarged refinery operations. Gasoline shipments to Great Britain and Netherlands increased and there were gains in shipments to a large number of smaller countries which obtain the bulk of their supplies from the Royal Dutch-Shell and Standard refineries. The detailed report giving all the buyers of Dutch West Indies petroleum exports, show that not only in the case of gasoline but other products, the three companies have widened the markets for their products. The gain in Diesel oil demand was especially noteworthy. The production of kerosene and lubricating oils is relatively small at these refineries due to the properties of the crude oil.

Exports of crude oil and refinery products from Netherland West Indies first nine months of 1934 and 1933 (data in barrels):

	1934	1933
Crude oil	6,135,000	6,096,000
Gasoline	20,122,000	16,178,000
Kerosene	1,864,000	2,041,000
Lubricating oil	681,000	509,000
Gas oil	5,088,000	5,979,000
Fuel oil	42,802,000	38,826,000
Diesel oil	4,387,000	2,263,000

Principal buyers of products exported from Netherland West Indies:

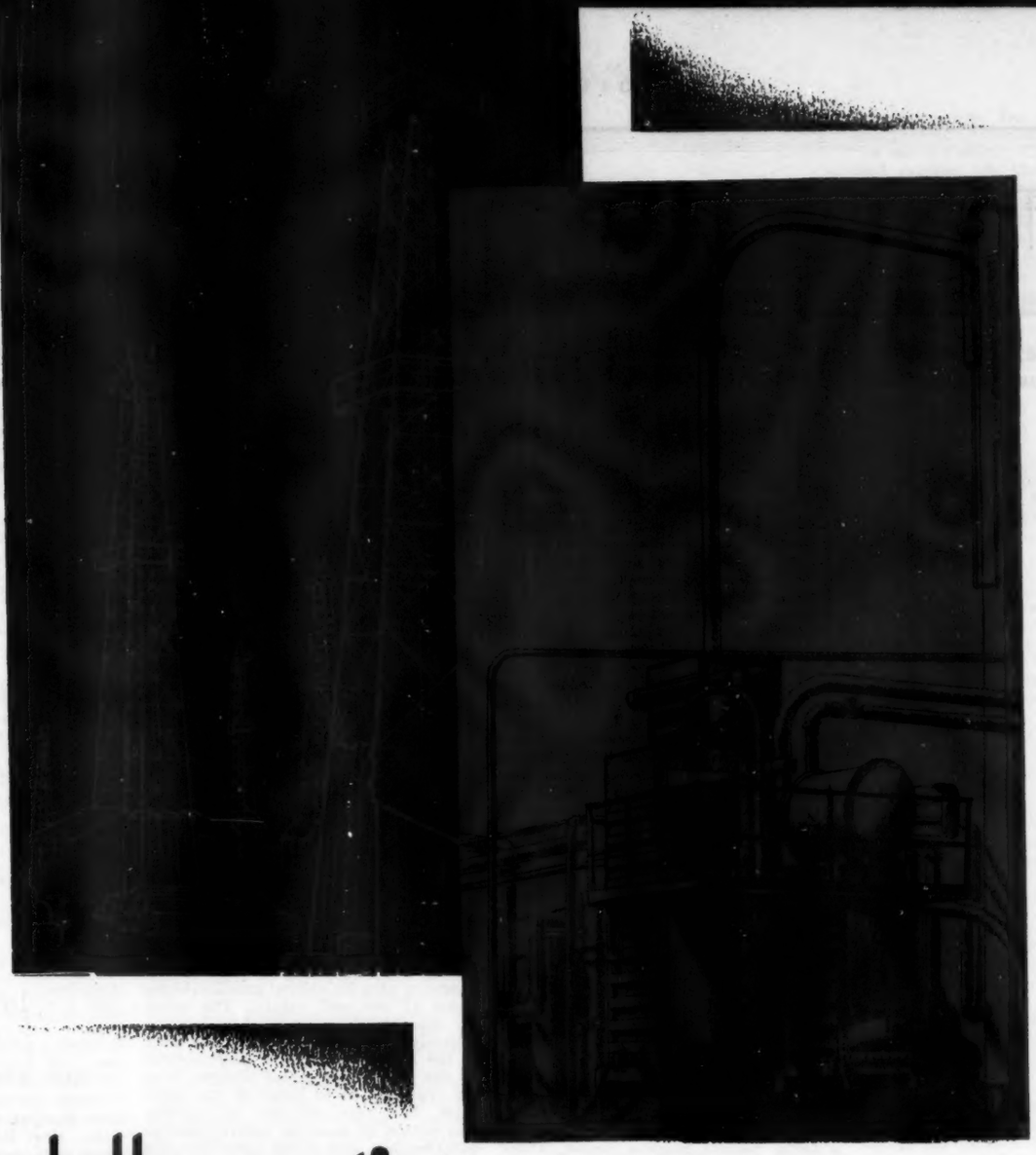
CRUDE PETROLEUM	1934	1933
France	2,947,000	2,859,000
United States	2,006,000	1,613,000
Canary Island	663,000	458,000
United Kingdom	228,000	243,000
Germany	73,000	.....
GASOLINE	**1934**	**1933**
United Kingdom	12,636,000	11,245,000
Netherlands	3,245,000	1,184,000
Belgium	614,000	663,000
Sweden	592,000	477,000
Germany	547,000	798,000
KEROSENE	**1934**	**1933**
Netherlands	642,000	411,000
United Kingdom	483,000	488,000
Sweden	155,000	128,000
Portugal	138,000	81,000
Italy	76,000	.....
LUBRICATING OIL	**1934**	**1933**
United Kingdom	261,000	143,000
Germany	207,000	220,000
Netherlands	165,000	145,000
Italy	48,000	.....
GAS OIL	**1934**	**1933**
United Kingdom	1,562,000	2,064,000
Netherlands	652,000	732,000
Italy	458,000	335,000
France	406,000	558,000
Sweden	366,000	229,000
FUEL OIL	**1934**	**1933**
United States	9,811,000	10,048,000
United Kingdom	6,580,000	4,844,000
Germany	2,452,000	2,462,000
Argentina	2,234,000	3,233,000
Cuba	1,926,000	1,711,000
Brazil	1,099,000	667,000
DIESEL OIL	**1934**	**1933**
Algeria	668,000	68,000
United Kingdom	387,000	238,000
Canary Island	346,000	.....
Germany	326,000	113,000
China	226,000	.....
Egypt	208,000	.....



Refinery located near Vienna, Austria, belonging to V. V. Maatschappij voor Beheer van Effecten, Bureau D'Tuudes M. B. E.

AUSTRALIA

The Australian government, on advice of a special committee appointed to investigate the matter, has decided to postpone action in regard to the manufacture of motor fuels and other oils by the hydrogenation of coal. The plans originally called for the installation of a plant similar to that now being completed in England by the Imperial Chemical Industries, Ltd. This plant will be in operation in the next few weeks and the Australian sponsors of the projects will wait until the results of this operation are definitely known.



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NATURAL GASOLINE MANUFACTURE

Oklahoma Tax Proposal Threatens Small Plants

In the proposal of Governor Marland of Oklahoma that natural gas be taxed 2 cents per 1,000 feet as it is produced at the well, stands the threat to force many small Oklahoma natural gasoline plants to close. At the present time efforts are being made to bring this fact before the state representatives in Oklahoma City and the compromise the state has suggested that the tax be reduced to one-half cent per 1,000 feet in lieu of the 2 cents, does not seem to help the situation greatly.

At the present time there are approximately 200 natural gasoline plants operating within the state. The great bulk of these plants were built years ago when one or another of the Oklahoma fields were under intensive development. With few exceptions these plants are of relatively small capacity and most of them are now operating at a small part of their rated capacities. This has been due to the natural decline of the gas supply in a majority of the scattered fields. The exceptions are those units built in the Oklahoma City Field, most of which process relatively large volumes of gas.

The small units have the advantage that in general they process a relatively rich gas and the total gas throughput is possibly only half or maybe one-sixth as much as the Oklahoma City unit making the same volume of product. These plants have the disadvantage that their cost of manufacture is relatively high per gallon recovered by reason of the fact the production is low. In more than half the cases these plants have operated at a loss throughout the past two years and except for the desire to conserve the natural resources in processing the gas as it is produced with the crude oil, many of the plants would not have operated.

It is very doubtful that these companies will continue to operate these units in order to shoulder another tax burden and the logical result of the load will be the further consolidation of plants and the inevitable removal of men from company pay rolls.

In the case of the Oklahoma City plants the burden will be equally heavy for there the gas is relatively lean and the equivalent of a tax of one-half to 1 cent a gallon will thus be placed upon the gasoline. This will not permit Oklahoma plants to operate in competition with many of the low-cost Texas plants, particularly those in the Panhandle area. Oklahoma natural gasoline was the only refined oil product to show a lesser average value in 1934 than in the previous year and obviously if the refiners of the state who buy the great share of the Oklahoma natural gasoline production could not afford to absorb the material at last year's low cost to them, they are not going to be able to help out much if a tax is placed upon Oklahoma gas going to these plants. It might even penalize Oklahoma manufacturers to the point where Texas natural can be moved to Oklahoma refineries at a lesser delivered cost than from the state's own natural gasoline plants.

LOUISIANA PLANT SOLD

Through the purchase of the Phillips Ptroleum Co.'s contracts and gathering system at Homer, in Claiborne Parish of North Louisiana, the Arkansas Natural Gas Corp., a Cities Service subsidiary, will add 2,500 gallons to the output of its natural gasoline plant in that area. Phillips' 10,500-gallon plant, which has been running only about 2,500 gallons daily, will be dismantled and shipped to Oklahoma.

Utilization of Natural Gasoline Rises in 1934 to Reverse Four Year Decline

The consistent gain in the use of natural gasoline in motor fuel blends over the first 11 months of 1934 definitely proves that the downward trend which began in 1929, has been reversed. Indications of this increase in natural gasoline utilization were evident in the first four months of 1934, but figures of so short a period were not considered reliable for definite predictions. During the 11 months in 1934, however, both the total amount and the percentage of natural gasoline blended in motor fuel showed gains over the corresponding period of 1933. In 1934, 25,524,000 bbls. of natural gasoline were utilized in the 11 months, an increase of 2,275,000 bbls. over 1933. The per cent of the total motor fuel rose from 6.3 to 6.7. The actual increase in overall consumption during the two periods was 9.8 per cent. Both natural gasoline and straightrun gasoline showed gains at the expense of cracked gasoline. The latter decreased in content from 44.6 to 43.7 per cent.

Several reasons may be cited for this increase. It is possible that the very low price which natural gasoline has maintained throughout the year is responsible for much of the increase. However, there has been a noticeable tendency in the use of more volatile gasolines. Automobile manufacturers have developed refinements in fuel lines to minimize vapor lock, thus greatly extending the market for lighter blends of fuel. The added anti-knock characteristics of the more volatile blends have also contributed to a better natural gasoline market. These are causes originating from the demand side of the market, and are the most reliable in deriving logical conclusions. There was, however, one important factor in the increase of natural gasoline sales which arose from supply rather than from demand. This was the great impetus which refining saw in the East Texas area. Both natural gasoline and straightrun gasoline markets were affected. The large shipments of straightrun gasoline from East Texas skimming plants substantially increased the total need for natural gasoline.

The yearly increase in consumption of natural gasoline as shown in Table I was fairly general throughout the United States. The increase in the Appalachian and East Coast areas, while small as compared with other districts, reflects an added interest in natural gasoline. This factor is of no little importance to the natural gasoline manufacturer. Refineries in these two concentrated consumption areas produce more than 20 per cent of the total amount of gasoline in the United States. Refineries of the Gulf Coast and Mid-Continent also market large amounts of gasoline in this region. Consequently, a small change in volatility requirements in the East creates a sharp demand for natural gasoline, and principally from the Mid-Continent.

California, by far the greatest consumption area for natural gasoline, blends about 17 per cent natural. The industry there enjoys a very close relationship with the refining industry and much of the natural gasoline is manufactured in the fields and mixed directly with the crude oil to be piped to the refineries. This plan provides an inexpensive method of handling natural gasoline with low loss, and at the same increases the economy of the entire pipe line system by lowering viscosity and preventing freezing. This setup is responsible for the high natural blends and proves the value of such gasolines in the market.

TABLE I—RELATIVE VOLUMES OF STRAIGHTRUN, CRACKED AND NATURAL GASOLINES BLENDED BY AREAS

	Straightrun (bbls.)	(%)	Cracked (bbls.)	(%)	Natural Gaso. (bbls.)	(%)	Total (bbls.)
First Eleven Months of 1934							
Okla., Kans., Mo.	24,248,000	48	21,113,000	42	5,269,000	10	50,630,000
Inland Texas	18,750,000	60	8,711,000	28	3,672,000	12	31,133,000
No. La., Ark.	3,932,000	47	4,002,000	47	498,000	6	8,432,000
Texas Gulf Coast	33,695,000	47	35,534,000	50	2,004,000	3	71,233,000
La. Gulf Coast	8,175,000	59	5,523,000	40	214,000	1	13,912,000
East Coast	31,997,000	51	30,268,000	48	1,113,000	1	63,378,000
Appalachian	7,948,000	48	8,114,000	50	367,000	2	16,429,000
Indiana, Illinois	25,865,000	42	33,687,000	55	2,112,000	3	61,664,000
Rocky Mountain	3,979,000	49	3,428,000	42	732,000	9	8,139,000
California	29,919,000	54	15,793,000	29	9,543,000	17	55,255,000
Total United States	188,508,000	49.6	166,173,000	43.7	25,524,000	6 7	380,205,000
First Eleven Months of 1933							
Okla., Kans., Mo.	25,200,000	50	20,877,000	41	4,628,000	9	50,705,000
Inland Texas	17,404,000	62	7,477,000	27	3,057,000	11	27,938,000
No. La., Ark.	3,906,000	51	3,433,000	44	373,000	5	7,712,000
Texas Gulf Coast	28,261,000	44	33,865,000	52	2,344,000	4	64,473,000
La. Gulf Coast	6,155,000	47	6,749,000	51	272,000	2	13,176,000
East Coast	30,499,000	49	31,546,000	50	933,000	1	62,978,000
Appalachian	7,645,000	48	8,179,000	51	207,000	1	16,031,000
Indiana, Illinois	24,148,000	41	33,433,000	56	1,634,000	3	59,215,000
Rocky Mountain	3,463,000	46	3,321,000	44	748,000	10	7,532,000
California	33,762,000	58	14,745,000	26	9,053,000	16	57,560,000
Total United States	180,443,000	49.1	163,628,000	44.6	23,249,000	6.3	367,320,000

TABLE 2—PERCENTAGE OF GASOLINE BLENDED BASED ON CRUDE OIL REFINED

	Straightrun gasoline output	Cracked gasoline output	Total straightrun and cracked	Natural gasoline used	Total yield per barrel of crude
1918	22.7	2.6	25.3	0.8	26 1
1919	22 5	2 8	25.3	0.8	26.1
1920	22.6	3 5	26 1	0.7	26.8
1921	22.6	4 5	27.1	0.6	27.7
1922	22.8	6.0	28.8	0 7	29 5
1923	24.0	6.0	30.0	1.0	31 0
1924	25.0	6.2	31.2	1.9	33.1
1925	23.1	9.3	32.4	2.7	35.1
1926	22.9	12.0	34 9	3.6	38.5
1927	23 8	13.2	36.0	3.9	39.9
1928	24.0	13.4	37.4	3.9	41.3
1929	24 3	14.5	39.3	4.7	44.0
1930	24.2	17.7	41.9	4.7	46.6
1931	24 6	19.7	44 3	3.9	48.2
1932	23 8	20.9	44.7	3.2	47.9
1933	22 5	21.0	43.5	2.9	46.7
First 11 months of 1934	23.1	20.3	43 4	3.1	46.5

Natural Gasoline Exports Increase in November

Large shipments of natural gasoline to the United Kingdom and the Netherland West Indies caused a sharp upturn in export figures for the month of November. The total volume of 313,126 bbls. leaving the country exceeded the October total by 271,471 bbls., an increase of 750 per cent. Large shipments at irregular intervals account for the great monthly fluctuations. Canada imported 58,383 bbls., a slight increase over the October figure. More than half of the natural gasoline was cleared through Galveston, with Los Angeles and New Orleans sharing the bulk of the remainder. The following table is compiled by the Bureau of Foreign and Domestic Commerce:

PURCHASES OF U. S. NATURAL GASOLINE

	November	October
United Kingdom	184,990	.....
Canada	58,383	41,665
Neth West Indies	69,753	.....
Total volume	313,126	41,665
Value	$631,198	$66,610

Custom Districts Through Which Cleared	November	October
Buffalo	7,490	10,549
Sabine	.....	19,310
Los Angeles	43,312	.....
Galveston	167,023	.....
Montana and Idaho	400	196
Dakota	4,672	7,573
Michigan	966	1,347
Duluth and Superior	1,543	2,680
New Orleans	87,720	.....
Total	313,126	41,655

NEW EAST TEXAS PLANTS

Plans are under way for a new natural gasoline plant in the East Texas area. Fred Bowen has taken a surface lease on 2 acres of the Willis Smith and others' No. 1 land in the J. S. Caruthers Survey for the site of the new plant.

A new refinery will also be built in East Texas shortly, it was learned through the leasing of surface rights on some tracts. The Premier Pipe Line Co. has purchased a surface lease on the E. B. Protho tract just east of production along the Texas & Pacific Railway right of way, near Longview.

RELIEF VALVE FREEZES

Extreme cold weather in Midland County, Michigan, caused the freezing of a relief valve on a surge tank at the Apex Gasoline Co.'s new natural gasoline plant in Section 17, Porter Township. The resulting explosion wrecked a 3,000-pound boiler and a section of a pipe rack, but injured no workers.

The new pipe line connected to the plant of the Dow Chemical Co. 14 miles away was frozen, delaying delivery of gas to the plant. About 5,000,000 feet of gas daily will be supplied the Dow company by Apex. The new plant has a capacity of 4,000 gallons of gasoline daily to be marketed through the Roosevelt refinery of Mount Pleasant, Mich.

STOP PIPE LINE DELIVERIES

Phillips Petroleum Co. has completed the contracts held by various refining companies participating in the Great Lakes Pipe Line system for this season's delivery of natural gasoline to terminals for blending, and Phillips is now using all of the material for manufacture into the new 77 premium grade fuel in its own refineries. The winter movement of the new 100 per cent stabilized premium fuel sold through company stations north of a line between Des Moines, Iowa, and Chicago has exceeded early plans, and that has been the major factor in the decision Phillips has reached.

Practical Application of Petroleum Solubility and Liberation Phenomena

By BEN E. LINDSLY

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The quest for exact and scientific knowledge of the phenomena attending the solubility of the lighter, gaseous hydrocarbons in those of the heavier, liquid range and the liberation of those gases and vapors from solution has been fraught with difficulty. It may be likened to the slow and labored tracing of a labyrinth within a newly-discovered cavern where each explorer leaves guiding signs for those who may follow.

Forward-thinking engineers were aware that gas dissolved in oil changed the resulting fluid mixtures, even when available information pertaining to scientific principles of producing oil and gas was meager. As might be expected, the subject of petroleum solubility, as such, was generally ignored in scientific literature for several years. In 1924, however, Dow and Reistle[1] published a brief paper, giving some of the results of their experimental work dealing with the absorption of natural gas and air in crude petroleum.

Other work by different investigators followed, and important contributions have been made to the literature. The combined efforts of Dow and Calkin[2], Beecher and Parkhurst[3], Mills and Heithecker[4], Comins[5], Lacey and his associates[6, 7, 8], and others now are generally known to most petroleum engineers, and this paper makes no attempt to describe their complete findings.

The work published to date has shown that surprisingly large volumes of natural gas can be dissolved in crude oil and that the effect of this is to decrease the viscosity, surface tension, and specific gravity of the oil[2]; that natural gas is more soluble in oil than air[1]; that, in general, the lighter oils (high A.P.I. gravity) dissolve more gas at given pressures and temperatures than the heavier oils[2]; that within limits the amount of gas an oil will dissolve increases with lowering of temperature[2, 3, 6]; and that the hydrocarbons forming the gas occupy space when dissolved in oil and, conversely, the oil shrinks in volume when gas is liberated from it[4].

"Solubility"

It may be well to say here that the term "solubility" has been used in the industry, and is used in this paper, in a rather loose sense. The concept of simple solution probably is satisfactory, from a practical standpoint at least, when dealing with a gas such as methane or dry natural gas in association with dead oil. Such oil, though a complex mixture, is composed of hydrocarbons with characteristics far removed from those in the gas; however, in dealing with a natural oil-gas mixture, which usually will contain a gradation of hydrocarbons ranging from waxes to methane, the relations found should be considered from the standpoint of the distribution and interchange of the constituents of complex mixtures between coexisting liquid and gaseous phases. In studying the behavior of such mixtures under varying conditions of pressure, temperature, and volume the concept of solution of one substance in another is not adequate, because change in conditions of temperature, pressure, and volume not only will alter the relative amounts of the two phases but also will change the composition of each phase.

Comins[5] determined the following equation, which expressed the relationship of solubility versus pressure for the crude oil of the Naft Khaneh oil field of Persia: $G = 1.36\ P^{0.838}$, where G is the gas content, and P the pressure in pounds per square inch (gauge). When this equation is plotted on co-ordinate paper, plotting G on the Y axis and P on the X axis, the resulting solubility graph is decidedly curved, and similar in shape to solubility curves reported by the writer[9] some two years later.

Most of the data in the earlier publications were in fair agreement, except that the solubility graphs in two of them[1 and 5] were curved (one concave[1] and the other convex[5]), whereas the graphs in three others[2, 3, 4] were straight lines substantially in agreement with Henry's law. Later the findings reported in these three were supported and extended over a pressure range of 2,400 pounds per square inch by Lacey and his coworkers[6].

One of the first objectives of the writer when he undertook a study of solubility was to determine, if possible, why the solubility graphs reported by some of the investigators were curved and others were straight lines substantially in accordance with Henry's law; also, to determine which type of curve would best represent the amount of gas remaining in solution in reservoir oil (in excess of the amount retained at atmospheric pressure), as the reservoir pressure declined in the normal process of production. With these immediate objectives the writer decided to follow the lead of Comins[5], whose experiments were made on natural oil-gas mixtures, presumably taken at the highest pressure possible, from the well-heads of flowing wells.

Natural Gas-Oil Mixture

In a preliminary report[9] of the findings of the writer solubility curves were shown which indicated that when pressure is gradually released from a natural oil-gas mixture by liberation of the dissolved gas, less gas is liberated per pound of pressure drop at high pressures than at low pressures. The curves therefore did not follow Henry's law but showed marked similarity to those obtained by Comins. A detailed study based upon Dalton's conception of Henry's law, as it relates to the solubility of the various components of mixtures of gases, such as those naturally associated with crude oil, showed that when oil is contacted with a gaseous mixture the more soluble (heavier) gases tend to dissolve first; later, as the pressure on the mixture is increased, the less soluble gases dissolve. When the process is reversed by reduction of pressure on a gas-oil solution, the least soluble gases tend to be liberated from solution first, and the heavier, more soluble gases are liberated later at lower pressures.

This phenomenon is called "selective" solubility, and whenever the conditions are such that selective solubility or selective liberation takes place, as in the liberation and removal of gas naturally dissolved in crude oil, the resulting solubility graphs will be curved. If, on the other hand, experiments are so controlled as to minimize or avoid selective absorption of the heavier gases, the data obtained will approximate the relations expressed by Henry's law. For example, if the pressure on a sample of dead oil is built up by successive additions of gas from a common source and if the experiment is so conducted that each of the small additions of gas is completely dissolved before fresh gas is added, there will be no opportunity for selective absorption, and the plot of the data will approximate a straight line.

The practical application of these principles can be appreciated by considering: (1) The effect of liberation of gas on the reservoir oil of a normally operated field, where the pressure in the reservoir is reduced gradually in the normal course of production; and (2) the repressuring of an oil field by pumping gas into oil sand, whose productivity has approached the economic limit as the result of normal operation. In the first instance selective liberation occurs, and the solubility graph representing the amount of gas in solution at different reservoir pressures (in excess of that retained at atmospheric pressure) will be curved in accordance with experimental results obtained on natural oil-gas solutions[5 and 9]. In the second instance the solubility graph representing that part of the reservoir oil which has been contacted with injected gas will be approximately straight, if it is assumed that the composition of the gas is the same for all increments of pressure and that the oil is always saturated with gas at the existing pressure. In this connection, however, Lacey[7] pointed out that if the gas merely comes in contact with the surface of the oil, without opportunity for comingling, it will take a very long time even to half-saturate an oil body. His calculations indicated that the time required to half-saturate (by surface contact alone) a 100-foot thickness of Santa Fe Springs crude, held in 20-mesh sand of 45 per cent porosity, with methane gas, would require 3,300 years.

Estimating Reserves

Other data which developed from the study of natural oil-gas solutions sampled at the well-heads of flowing wells is of special importance in estimating the reserves in oil fields. In experiments on crude oils from the Ventura and Kettleman Hills oil fields[10] the liberation of gas from solution caused the oils to shrink in volume approximately 11 per cent and 40 per cent, respectively. Furtheremore, the quantity of gas that was liberated from solution (from well-head samples) was surprisingly large when compared with the results of laboratory experiments performed by dissolving comparatively dry natural gas in dead oil. Projection of curves obtained by liberating gas from live Kettleman Hills 62.6° A.P.I. oil, Kettleman Hills 44.5° A.P.I. oil, Oklahoma City 43° A.P.I. oil, and Ventura 34.8° A.P.I. oil, indicated that at 1,500 pounds per square inch pressure and 70° F. these would contain approximately 1,300, 960, 680, and 440 cubic feet per barrel, respectively, of gas in solution, over and above the amount contained at atmospheric pressure.

A natural sequel of the study of well-head samples was the study of bottom hole samples. This required the development of a bottom hole sampling apparatus; new technique in handling the samples, such as procedure for redissolving the gas that would separate from the oil when the sampler and its contents were cooled from bottom hole temperature to that of the atmosphere; and devising of methods for transferring high-pressure gas-saturated oil from the sampling apparatus to small containers, so that a new variety of experiments might be performed to meet the growing requirements of the petroleum engineer, who no longer is satisfied merely to know that a given oil contains a certain number of cubic feet of gas in solution. In other words, to take a representative bottom hole sample was only the beginning of the problem. The question of what should be done with a bottom hole sample after it was obtained, so that the engineer could put the data to practical use, was of more importance.

"Energy"

In considering what might be done with a bottom hole sample it was recalled that, in addition to the expression "gas-oil ratio," the word "energy" was being employed more and more. In fact, these two terms seemed to be inseparable companions; when one was mentioned, the other usually was close by. "Gas-oil ratio," however, was a definite proportion, measurable in recognized volumetric units, whereas "energy," as related to the oil in the reservoir, had been expressed only in such general terms as "much" or "little."

The following statement by Pierce and Lewis[11] was an early expression of the nature of the requisite for analyzing the mechanics of flow and for determining efficiencies in reservoir sands and in oil wells. They said:

"We have seen no consideration of the fundamental principle, which is that the oil represents the useful work done by the energy contained by the gas, measured by volume and pressure in terms of horsepower or foot-pounds of work."

A partial answer to Pierce and Lewis may be found in a report by the writer[12] where it is shown that 1 cubic foot of East Texas reservoir oil can do more than 400,000 foot-pounds of work in expanding isothermally from 755 pounds per square inch to atmospheric pressure. But before proceeding further with a discussion of the mechanical work that can be developed by the expansion of a natural oil-gas mixture, it is well to note here the definite advance in solubility researches through study of bottom hole samples. Obtaining and experimenting on such samples eliminates to a large extent the uncertainties attending the interpretation of data from experiments on "synthetic" samples, made up in the laboratory from comparatively dead oil and dry natural gas: In this respect, it is interesting and instructive to study the reports of Pym[13], Jones[14], and Comins[15], whose investigations cover a study of bottom hole samples from the oil fields of the Anglo-Persian Oil Co., Persia. A review of these reports is not feasible here, but it may be stated that the solubility curves developed by Pym conform in general to those of bottom hole and well-head samples reported by the writer[9, 10, 12, 16].

The writer has developed many solubility curves from natural oil-gas solutions, plotting the "gas dissolved per barrel of residual oil" as ordinate against the pressure as abscissa. The "gas dissolved" at any pressure refers to the total gas that comes out of solution over the full range of pressure reduction from that pressure to atmospheric. In general, the portion of these curves between the pressure at which the gas begins to come out of solution and a pressure of something less than 300 pounds per square inch is approximately a straight line. This line, if extended, intersects the vertical axis at a point considerably above the origin. From somewhat less than 300 pounds per square inch to at-

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mospheric pressure the curve trends downward with increasing slope, indicating that a great deal more gas is liberated with reduction in pressure from 300 pounds per square inch to atmospheric than with an equal pressure change in the higher range of pressures; also, that the quantity of gas liberated per pound of pressure drop increases as the total pressure on the sample is reduced.

The question may be raised as to whether the experiments on which these curves are based represent true equilibrium between the gaseous and liquid phases. They were designed to simulate conditions in actual operation rather than to obtain true equilibrium. The possibilities of somewhat unstable or metastable states are recognized. It would be interesting to perform experiments with the same samples under conditions of true equilibrium and compare the results with those obtained from the experiments designed to simulate conditions of operation. Obviously, the best check on true equilibrium is to determine whether the curve can be followed in the reverse direction by forcing the gas back into solution. However, convenient experimental apparatus to reverse the operation of differential liberation is difficult to devise and seems unnecessary from the standpoint of simulating the actual conditions within the reservoir.

Flush Liberation

To simulate conditions within the flow string the method of flash liberation has been devised. It would seem that this method of gas liberation affords ample agitation to warrant the assumption of equilibrium between the liquid and the gas in contact with it. To give further assurance of this assumption, however, flash liberation experiments have been performed in various ways, on identical samples, as checks against the method ordinarily used[16]. In none of these experiments has it ever been found that the additional opportunities afforded by the check experiments for contacting the gas and liquid components made any difference in the pressure-volume relations other than could easily be explained by the limits of experimental accuracy of determining pressure and volume.

Since reporting on bottom hole samples of East Texas crude determinations have been made of the amount of mechanical work that could be performed by expansion, from reservoir pressure and temperature to atmospheric conditions, of bottom hole samples from the Oklahoma City and Crescent (Oklahoma) Fields. Values up to 1,328,000 foot-pounds per cubic foot of reservoir oil have been indicated.

A practical application of energy determinations on bottom hole oil is given in the following account of an analysis of the flowing efficiency of a well. For the sake of brevity, many steps included in the more complete report[16] are omitted here.

The data obtained from the bottom hole sample under consideration showed a shrinkage of about 25 per cent of the initial liquid volume (33 per cent of residual liquid volume) due to release of gas from solution, when the pressure and temperature were reduced from reservoir to atmospheric conditions. Therefore, when the well was flowing at the rate of 18 bbls. per hour (as measured under atmospheric conditions), approximately 24 bbls. per hour (2.246 cubic feet per minute) of reservoir fluid was entering the bottom of the well. One cubic foot of reservoir oil was shown by experiment, making certain arbitrary but seemingly reasonable assumptions, to be capable of doing 1,328,000 foot-pounds of work in expanding from reservoir conditions to atmospheric temperature and pressure. Therefore, the 18 bbls. per hour (2.246 cubic feet per minute) of reservoir fluid had a capacity for developing

$$\frac{2.246 \times 1{,}328{,}000}{33{,}000} = 90.3 \text{ horsepower.}$$

Further analysis indicates that the expansion of this 24 bbls. per hour of reservoir fluid, as it flowed from its initial position in the sand to the bottom of the well, represented a capacity for developing 2.7 horsepower; also, that expansion of this fluid within the well, as it moved from the bottom of the hole to the well head, represented a capacity for developing 21.8 horsepower. If the fluid within the well head could have been expanded to atmospheric temperature and pressure under ideal conditions, an additional 65.8 horsepower might have been developed. However, the fluid was throttled from the well head pressure to atmospheric conditions so it did no useful mechanical work.

If the power required for the actual mechanical work of lifting the fluid from a position at the bottom of the well to the surface, expressed as a percentage of the power that might be developed by expanding the fluid from bottom hole to well head conditions, is considered to be the efficiency in the flow string, the efficiency may be estimated as follows: The flow at the rate of 18 bbls. of oil per hour requires lifting 2.246 cubic feet per minute (24 bbls. per hour) of reservoir fluid weighing 45.8 pounds per cubic foot. This is equivalent to lifting 103 pounds per minute to a height of 6,100 feet (the depth of the well), which would

$$\text{require } \frac{103 \times 6{,}100}{33{,}000} = 19 \text{ horsepower.}$$

Since expansion of the fluid within the flow string represented a capacity for developing 21.8 horsepower, the efficiency, as defined, is $\frac{21.8}{19} \times 100$ or 87.2 per cent.

An efficiency of 87.2 per cent seems high at first thought but is readily understood when it is considered that the maximum velocity of flow at 18 bbls. per hour would be only 0.3 foot per second and that the volume of the flowing mixture at the well head was only double its volume at the bottom of the well. with such a low velocity of the flowing mixture the friction could not be great, and with this small volumetric increase the flowing mixture probably was a dense foam, because the bubbles of gas coming out of solution were minute. With true foam-flow there can be little slippage; hence, with little friction and probably less slippage, the flowing efficiency necessarily was high. Under such conditions it might be considered that the well "foamed over."

The power required for the actual mechanical work of lifting the fluid from its initial position in the sand to the surface, expressed as a percentage of the power that might be developed by expanding the fluid from reservoir to atmospheric conditions, might be looked upon as an overall efficiency of flow. The efficiency, as so defined, is relatively low. Assuming that the flow through the sand was horizontal, so the total lift of the fluid was 6,100 feet, the actual raising of the fluid by a frictionless and reversible process would have required 19 horsepower. As has been indicated, expansion of the fluid from reservoir to atmospheric conditions, in an ideal process, would develop 90.3 horsepower, so this overall efficiency is only $\frac{19}{90.3} \times 100 = 21$ per cent.

Bottom Hole Sampling as a Routine Procedure

With reference to the future aspect of solubility investigations, there are several reasons why the study of bottom hole samples should be greatly expanded. Dozens of engineers, instead of a mere handful, should be taking bottom hole samples. These samples, together with the development of "well-performance" curves similar to those reported by Reistle and Hayes[17], should become a matter of routine in all oil fields, where production depends upon reservoir energy. Laboratory examination of these samples should include tests relating to the rate of foam subsidence, as this rate will have a pronounced effect upon slippage in a flowing well.

Much of the laboratory work connected with the examination of bottom hole samples is complicated and tedious. More rapid methods of obtaining data probably can be devised and used without detriment to the results. With many investigators working along these lines, faster progress would be made in developing the required technique.

Shrinkage Resulting From Flash Liberation

Among others, a good method is needed for determining shrinkage of the oil due to flash liberation of the dissolved gas. Shrinkage by differential liberation can be obtained with a fair degree of accuracy, but owing to the very nature of flash experiments, wherein the entire sample turns to spray when it is expanded into a large container previously evacuated, it is a physical impossibility to collect all of the residual oil, because a small part of the liquid remains inevitably as a coating on the comparatively large interior surface of the expansion or flash chamber. Attempts to determine shrinkage by measuring the volume of residual oil after flash liberations have resulted in values that were too high. To overcome these difficulties, an indirect method of determining shrinkage is now being studied. This method is based upon the assumption that a given mass of an individual component of natural gas, when dissolved in oil at a given temperature, will occupy approximately the same volume, regardless of the pressure on the mixture. Probably this is not quite true, because crude oils are slighly compressible. The writer's experiments on crude oils of the East Texas[13] and Crescent (Oklahoma)[16] Pools indicated their compressibilities to be about 0.09 to 0.10 per cent in volume per 100 pounds pressure increase. This source of error, however, is slight.

In accordance with the assumption that a given mass of a hydrocarbon in solution will occupy the same space, regardless of the pressure on the mixture, experiments are now in progress at the Bartlesville station of the Bureau of Mines. In these the individual gases methane, ethane, propane, and butane are dissolved separately in different portions of Oklahoma City crude oil topped at 160° F. Samples thus prepared are subjected to differential liberation of the dissolved component, and accurate measurement of shrinkage caused by the liberation of each component (in the absence of the other gases) can be observed by reading the oil level in a sight gauge of suitable strength and construction, before and after the liberation of the particular component under investigation.

The tentative values that have been obtained for the volumetric gaseous-liquid equivalent for methane, ethane, propane, and butane have been applied to a bottom hole sample whose shrinkage by differential liberation previously had been determined. By actual experiment this sample decreased 24.9 per cent in volume (not including thermal shrinkage) upon liberation of 590 cubic feet of gas per barrel of initial oil, over a pressure range of approximately 2,800 pounds per square inch. Of this gas, 444.4 cubic feet was methane; 59.5 ethane; 41.1 propane; and 45 butane and heavier hydrocarbons. According to the tentative volumetric gas-liquid conversion factors, which will be substantiated or corrected by future experiments, the liberated methane occupied 0.7200 cubic foot when in solution in a barrel of oil at 2,800 pounds pressure per square inch, the ethane 0.1721 cubic foot, the propane 0.1548 cubic foot, and the butane and heavier hydrocarbons, 0.2460 cubic foot. The total volume occupied by all constituents of the gas was 1.2929 cubic feet, or 23.03 per cent of 5.61 cubic feet (1 bbl.) which was the initial volume of the oil-gas mixture at 2,800 pounds per square inch.

The discrepancy of 1.87 per cent between the experimental and calculated shrinkage is not serious in view of the fact that the volumetric gas-liquid conversion factors were obtained at 132° F. (the bottom hole temperature at Oklahoma City), whereas the experiments on the sample under consideration were conducted at 149° F. In accordance with these encouraging, though meager, results, it is hoped that a method of estimating volumetric shrinkage of any sample of oil, regardless of the method of gas liberation (flash or differential), can be developed. For such determinations it will be necessary to know: (1) The volume of gas liberated and (2) its composition. Such information is especially valuable in the study of vertical flow of oil-gas mixtures, because in vertical flow the gas-oil ratio is changing constantly within the flow string due to the increasing liberation of gas upon reduction of pressure during the up-flow of the mixture. The total volumes at given pressures of the oil-gas mixtures produced from many wells have been determined and represented graphically by pressure-volume (PV) curves of the kind discussed later in this paper, but the volumetric ratios of gas to oil at the various pressures are unknown.

Oil Reserves

Other future aspects of solubility investigations relate to the possibility of estimating oil reserves from data obtained by examination of bottom hole samples.

Prior to restricted production enforced by proration measures the production decline-curve method, outlined by Beal[18] and amplified by Cutler[19], for estimating the ultimate production of oil wells, was generally accepted as being reasonably accurate and satisfactory. Since the natural flow of oil from oil sands has been restricted by proration, however, no satisfactory method has been developed to supersede decline curves for estimating the ultimate production of an oil pool.

The study of bottom hole samples as a means of leading eventually to a substitute for the production-decline curve method of estimating oil reserves has long been in the mind of the writer. Just how data resulting from such study can be applied to this purpose is still obscure. However, attacking the problem along lines similar to the pressure-drop method used in estimating gas reserve seems to offer possibilities. To estimate gas reserves by this method it is necessary to know the reduction in reservoir pressure resulting from the withdrawal of a definite quantity of gas. With such data, the original volume of gas in a reservoir can be calculated by applying the gas laws with suitable corrections for deviation and other factors.

It is unlikely that the estimation of oil reserves by an "energy-drop" method will ever be as simple or as accurate as the pressure-drop method for estimating gas reserves. It may be possible, however, to combine or extend the suggested method to include an "energy-decline" curve which in some ways would be similar to the production-decline curve.

It seems probable that a fairly definite relation may be found to exist between the volume of oil withdrawn from the reservoir and the energy decline, per unit volume of reservoir oil, caused by that withdrawal. Possibly an energy-decline versus oil-production curve, based upon accurate data determined over definite periods of time, when extrapolated to points representing 90 or 95 per cent energy-decline, might give a fair idea of the total amount of oil that would be produced. The quantity of oil to be produced after most of the reservoir energy is expanded will be relatively small. This method probably could be applied only to oil reservoirs under volumetric control, such as the Oklahoma City Field. In such reservoirs as East Texas (hydraulic control) it is not likely to be effective.

Various engineers are working to develop methods for estimating petroleum reserves. As stated, this condition has been brought about by the present inadequacy of the production-decline method to consider all necessary factors in fields under restricted production. Indicative of this trend of thought is a suggestion made to the writer by Donald L. Katz, Phillips Petroleum Co., Bartlesville, Okla.

In brief, Mr. Katz proposes to estimate the total volume and volumetric

change of the reservoir oil by using analyses of the fluid obtained from bottom hole samples after definite quantities of oil and gas have been produced. In addition to complete analyses of the liberated gases and residue oils, and to solubility curves, the proposed method would utilize data pertaining to oil and gas production, bottom hole temperatures and pressures, and the physical properties of the hydrocarbons. By calculating from these indicated data a "material balance" on the reservoir at intervals during the life of a field, Mr. Katz believes it possible to estimate the original volume of the fluid content of the reservoir. A somewhat similar approach to the problem was suggested by Coleman, Wilde, and Moore[20], and Millikan[21] and others also have considered this general subject of estimating reserves from reservoir data.

Present knowledge seems to indicate that energy-decline versus oil-production curves, fluid-composition versus oil-production curves, and other reservoir-production relations soon may furnish practical means by which engineers may reasonably estimate the fluid content of and ultimate recovery from reservoirs under curtailment.

Oil From Different Parts of a Reservoir

In future work attempts should be made to obtain bottom hole samples from different parts of producing sands — for example, close to the gas-oil contact, half-way down the flank of the structure, and close to the oil-water contact. Such information is not available in the literature for any field in the United States. In reporting results from bottom hole samples in the Persian oil fields, however, Pym[13] shows solubility curves of samples, taken 8 miles apart on the same structure, which are almost identical. The inference is that these two samples were from the same depth because Mr. Pym also states, in effect, that samples from lower levels contain more dissolved gas than samples higher in the structure.

Bottom Hole Samples and Physical Chemistry

The solubility problem as it relates to the production of crude oil has been treated by the writer principally from the standpoint of the engineer. The phenomena of solubility and phase relations in complex hydrocarbon mixtures present many problems in physical chemistry. The development of equilibrium constants of the various hydrocarbon gases, similar to those reported by Katz and Brown[22], but suitable for crude oil, should enable the physical chemist to supply much information on the properties of the reservoir oil at various stages in the life of a pool. Such information relating to the phase relations of the various components as they exist in the formation probably can be determined by analysis of the oil and gas produced at the well head.

Pressure-Volume—Temperature Relations

The writer has expanded bottom hole samples isothermally into various sized chambers which have previously been evacuated. In such determinations, the pressure was recorded for each volumetric change. The pressure-volume (PV) charts thus determined serve as a means of calculating the mechanical energy in foot-pounds that could be obtained by the expansion, under certain assumed conditions, of a unit volume of reservoir oil. They provide a standard of comparison that may be used in studying the behavior of the fluids in the well or sand in somewhat the same way that the Rankine cycle is employed as an ideal in studying indicator cards of steam engines.

When the expansion curves of the samples that have been tested are plotted on logarithmic paper, they are approximately straight, except for one pronounced break or change of slope. This break occurs in the upper pressure range when the volume is not more than two or three times the original volume of the gas-saturated sample. Therefore, the curve may be represented approximately by two straight lines, intersecting at this point of break, the line above the intersection (higher pressure range) having the greater slope.

Just why the two sections of these log P versus log V plots should form straight lines is as great a mystery to the writer as is the pronounced change of slope at their intersection. Further research should explain the reason for the break, as well as the puzzling question of why there are not more breaks. There is reason to expect these log P versus log V plots would be curved, because the slopes of the PV curves of gases vary with the composition of the gas. The volumetric changes of the oil-gas mixture, resulting from liberation of gas from solution upon reduction of pressure, involve not only the expansion of a medium of changing composition but also the addition to the gaseous phase of the gas that is liberated progressively from the oil as the pressure is lowered.

Notwithstanding these complex conditions, the slope of the line below the break (lower pressure range) is not far removed from unity and in that respect resembles the plot for an ideal gas. The slope of the line above the break (upper pressure range) is considerably greater than unity, but usually less than 2. Possibly a slope ranging between 1.3 and 1.6 would be representative of the line for the higher pressure range. When the reasons for the shapes of these plots are understood more thoroughly PV curves for reservoir oil can be developed with greater certainty.

Probably the most important advance in the practical application of bottom hole sample data to petroleum engineering will relate to the determination of the energy required to propel oil through the sand to the well, and thence to the surface, at different rates of flow. Data of the kind referred to in this paper, indicating an efficiency of 87.2 per cent in a flow string, should not only be confirmed or supplanted by more complete information but also should be augmented by numerous tests which will provide similar data for different rates of flow under various reservoir and well conditions.

The writer believes that more analyses of this nature will lead inevitably to better production methods, to conservation of reservoir energy, and to a greater ultimate yield of oil than would ever be possible under ordinary methods of production. Such favorable results should increase the benefits to the public and profits to the individual to be derived from this nation's petroleum resources.

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Effect of Verticality on Spacing of Wells

(Continued from Page 17)

give a value to otherwise almost valueless data. Also, it is well to determine by oriented survey in each field whether, under the drilling conditions adopted, the departure from the vertical is more or less in one plane. If it is not, then a suitable allowance may be made when determining the permissible error. In such cases an elaborate instrument is called for, but one such instrument held on joint account in Trinidad should meet the requirements of all operators.

Oriented surveys, therefore, have their use, but should be seldom necessary, and the same may be said of the correction of deviation by oriented whipstocks, which at best must be an extremely expensive process.

There are many well survey instruments, but the most suitable for prevenitve work is the acid bottle type for lowering in drill pipe. The acid bottle can conveniently be run prior to changing bits, or about every 50 feet. When bits can make big footage experien ceis the only aid to a decision whether a reading is required before the bit is dulled. Fortunately, in such ground there is least cause for deflection. The acid bottle has all the advantages of simplicity and low cost, its dangers have been stressed by those who have more complicated instruments to sell; in practice there are none. Its readings are correct to within ¼°. With it a reading of ¾° to 1° is observable with the naked eye, and this constitutes its greatest advantage, for the driller can run and read the bottle for himself and thereafter has no "alibi." Its psychological effect is most noticeable in checking uncontrolled drilling.

Acid Bottle Costs

The cost of bottles and acid is small, as only half an inch of 50 per cent acid is used at each run. After each run the bottle is filled with molten asphalt to the previous reading. This reduces the cost of acid to a minimum. When the bottle has been completely used it is broken and the asphalt recovered.

Verticality being of the utmost importance, the driller must recognize that his value lies not in the footage, but in the vertical footage he makes—for the value of footage may be said to vary inversely as the square of its deflection. Therefore, every driller, when making hole, should adopt this maxim as his own:—

"Patience. Gravity is your only friend, give it a chance."

Appendix A

Appendix "A" attempts to show the possible economic results of uncontrolled drilling. With regard to assumption 4, no literature has been found on the evaluation of drilling error in terms of well spacing. It is, however, perfectly obvious that (if drainage is to be maintained) spacing must be reduced when the drilling error increases.

The reduction in spacing will approximate very closely to the increase in error, and therefore where 300 feet is accepted as the correct spacing with reasonably vertical wells, 250-foot spacing would be required if the error be increased by 50 feet. The converse is equally important, for decreased error allows of increased spacing and lower drilling costs per unit area.

Assuming:—

1. That a well drilled at 300 feet spacing under strictly controlled conditions costs $20,000 and will drain one unit of area.

2. That the cost of drilling such a well is divisible as follows:—

A—40 per cent = Direct drilling cost, including $1,000 for site and derrick	=	$8,000
B—20 per cent = Casing cost	=	4,000
C—20 per cent = Plant charges	=	4,000
D—20 per cent = Overhead charges	=	4,000
		$20,000

3. That direct drilling cost may be subdivided pro rata to driller's time, and that 10 per cent is spent on making hole.

4. That an increase of 100 per cent in the rate of making hole results in an average increase of 50 feet in the error due to departure, and therefore the number of wells to drain unit area will be increased by approximately 40 per cent, i.e., 1.4 wells, where one was sufficient.

Therefore, drilling costs under controlled and uncontrolled conditions will be as follows:—

	A		B	C	D
	Site and derrick	Making hole	Rigging up and down, running in and out, setting casing, bringing in, etc.	Casing cost	Plant charges	Overhead charges
Controlled	$1,000	$700	$6,300	$4,000	$4,000	$4,000
Uncontrolled	$1,400	$525*	$8,820	$5,600	$5,600	$4,000†
Controlled, total = $20,000; uncontrolled, total = $25,945.						

*i.e., 1.4 wells at 50 per cent of $700.
†Increase omitted due to difficulty in assessing.
An increase of $5,945 in the cost of drilling unit area, or 29.7 per cent.

AMERICAN CARS IN SCOTLAND

The imminent reduction in the horsepower tax together with improved economic conditions makes the outlook for American cars in Scotland considerably brighter than for some time, according to a report from the American consulate-general, Glasgow, made public by the Commerce Department.

Scotland, the report points out, has always purchased more cars from the United States than from any other foreign source.

Great Britain's departure from the gold standard, together with the adoption of import duties for the protection of the home industry, caused a considerable decrease in he market for American made cars. However, attendance and volume of business transacted at this year's automobile show in Glasgow point to a resumption of the former Scottish consumption level.

FEDERAL GASOLINE TAX

Senator Capper of Kansas January 17 offered to the Senate an amendment to the Revenue Act of 1934, eliminating the federal gasoline tax of 1 cent per gallon. He declared the federal tax discriminatory, unjust and outrageous.

Caesar Field Continues to Share Spotlight With the West Tuleta Field in Southwest Texas

SAN ANTONIO, Tex., Jan. 21.—The Caesar Field, northwestern Bee County, and the West Tuleta Field, north central part of the same county, continue to hold the spotlight of Southwest Texas developments. Since the completion of Firm Oil Co.'s No. 1 Grissom, which extended the producing limits of the Caesar Field, three-quarters of a mile southwest, last week, interest now is centered on Luling Oil and Gas Co.'s No. 5-B Ruhman, 2 miles northeast of the above test. It cored the Pettus sand from 3,074-86 feet and late in the week was preparing to test. No drill stem test was made as the sand cored, showed to be highly saturated. If this test makes a producer it will practically prove the field for a distance of 2 miles northeast and southwest.

This field, originally discovered as a gas field, and recently proved for oil production by Luling Oil and Gas Co.'s No. 4 Ruhman, is becoming more important each week, and plans for a rapid development program are being made. Luling Oil and Gas Co. has completed a pipe line to Burnell in Karnes County, and is building an improved roadway to its properties. Between the Grissom producer and the main part of the field, El Toro and others are clearing location for No. 1 Gardner a half mile northeast. Location is 920 feet from the east line and 870 feet from the south line of the E. Gardner 105-acre tract.

West Tuleta Field

While the developments in the West Tuleta Field were more or less of a routine nature during the week, with only one well completed, the field got 7 new locations. The lone completion was Whisenant and Trenchard's No. 2-B Rapp, in the southwest part of the field in Section 8. It was drilled to the Pettus sand at a total depth of 3,910 feet, but was plugged back after testing salt water, and was completed for a small well in sand from 3,075-90 feet. On an 18-hour gauge it made 24 bbls., with tubing pressure 200 pounds. The test was completed in the same sand which last week showed 200 feet of oil and 50 pounds of pressure on a 15-minute drill stem test, and gives the field two producing horizons. At the close of the week two other wells were in process of completion. Mills Bennett Production Co.'s No. 1 Tuleta Mercantile, in Section 10, cemented 7-inch casing at 3,899 feet, with the hole bottomed at 3,904 feet, and was preparing to drill plug. Although foot measurements are not available at this time, it is reported the company has made several locations to be drilled on this tract. Heyser, Heard and Walton's No. 1 Walton, in the center of Block 1, Section 20, topped the Pettus sand at 3,949 feet and was preparing to drill the plug. It is bottomed at 3,966 feet. This test also showed for a well in the shallow horizon from 3,107-37 feet, when it tested 200 feet of oil and 50 pounds of pressure on a 15-minute drill stem test. On the southwest part of the field, Houston Oil Co.'s No. 2 Stauss, in Section 9, was preparing to core for the Pettus sand. It it reported the company had made several locations for this lease, some of which probably will be announced next week. Edwin M. Jones' No. 2 Silcock, Section 10, on the east edge of the field, tested 300 feet of salt water in the Pettus sand, and was abandoned at a total depth of 3,927 feet.

Two miles due south of Dirks Bros.' No. 1 Roth, which opened a new field in Bee County, a few weeks ago, Earl Calloway, has made an interesting wildcat location for his No. 1 Imogene Hall. Location is near the center of the south 100 acres of the west 200 acres of the Hall 380-acre tract in the H. W. Fontaine Survey, approximately two miles southwest of the old Cosden pool production west of Pettus.

Caldwell County

In the Old Salt Flat Field, Caldwell County, Dawn Oil Corp.'s No. 1 F. Tiller, in the G. Hinds Survey, topped the Austin Chalk at 2,235 feet, the Eagleford shale at 2,438 feet, and was completed at a total depth of 2,485 feet for an initial production of 150 bbls. daily. Casing was cemented at 2,235 feet. It was treated with 1,500 gallons of acid.

San Patricia County

In San Patricio County, Stanolind Oil and Gas Co. has announced location for its No. 1 J. J. McMillan, 990 feet south and 660 feet east of the northwest corner of an 80-acre tract in the Fulton Pasteur Subdivision, in the eastern central part of the county in the P. Fitzsimmons League. The test is on a large block, which has been held by the company for some time. In the Sinton area, Plymouth Oil Co.'s No. 2-B Welder, is coring below 5,970 feet. Humble Oil and Refining Co. is rigging up for its No. 1 James F. Welder, 2,850 feet northwest of the northwest line of Circle W. 150-acre lease, and 2,400 feet southwest of the northeast line of the company's lease in the V. Tares and P. Vallareal Survey.

Jim Wells County

On the Jackson Trend, Jim Wells County, Maer and Shira have made location for a wildcat test, in the center of Block 15, Maer and Shira Subdivision, on a portion of the Schaeffer ranch, three miles west of Gulf Production Co. gas well, and 4 miles west of Smith and Storey's No. 1 Dilworth, which was completed for a large gas well last week.

Live Oak County

A mile north of the McNeil Field, Live Oak County, Coquat and Others' No 1 Little, in the M. M. Shipp Survey, is drilling below 5,260 feet.

Balcones Fault Zone

Along the Balcones Fault Zone, Pederson and others' No. 1 Turner, an interesting wildcat, in the northern part of Lee County, is coring below 6,440 feet, reported to be still in the Georgetown lime. It is said to be running high, and is expected to reach the Edwards lime during the week. Near the town of Livingston, Humble Oil & Refining Co., made location for No. 1 J. Simmons, a wildcat test, 3,650 feet from the south line and 2,510 feet from the east line of the Hunter Survey.

Sam Fordyce Field

The producing limits of the Sam Fordyce Field, southwestern Hidalgo County, were extended in two directions the past week, by Heep Oil Corp.'s No. 3 Seabury and Taylor and Navarro Oil Co.'s No. 1 Flores. On the western edge of the field, Heep Oil Corp.'s No. 3 Seabury and Taylor, tract 256, porcion 38, was completed at a total depth of 2,785 feet for an initial production of 11 bbls. per hour through a one-eighth inch choke, under working pressure of 150 pounds and closed in casing pressure 220 pounds. Saturated sand was cored from 2,757 to 2,785 feet. Navarro Oil Co.'s No. 1 Flores, tract 275, porcion 40, about 3,000 feet east of the discovery well, cored saturated sand from 2,751 feet to 2,758 feet, the total depth, and was completed for an initial production of 12 bbls. per hour through one-fourth-inch tubing choke, with tubing and casing pressure 240 pounds. In the east extension area, Showers and Moncrief's No. 1 Smith, share 3-B porcion 41, cored saturated sand from 2,758-62 feet, and is waiting on cement to set. In the same area, Weekley Oil Corp.'s No. 2 Smith, tract 278, porcion 40, had saturated sand from 2,746-2,752 feet, the toal depth, and the operators have cemented casing.

Skelly Oil Co., a recent purchaser of acreage in the field, is reported to have bought from Otto Woods and others, the south 10 acres of the east 25 acres of the west 45 acres of the north 120 acres of tract 256, porcion 38, for a consideration of $450 in cash and the same amount in oil.

Jim Hogg County

In Jim Hogg County, Texas Co.'s wildcat test, No. 1 Guiterrez, in Survey No. 164, northwestern part of the county, is drilling in shale below 2,803 feet. It is reported to have topped the Cole sand at about 2,200 feet compared with 2,400 feet in the Murchinson and Fain test in Survey No. 452, 9 miles north, and 2,700 feet in Sun Oil Co.'s No. 1 East, recently drilled in Survey No. 33, 5 miles. Texas Co.'s No. 1 Guiterrez, being downdip 9 miles from the Murchison and Fain test, would normally get the marker lower, and the fact that it got it 200 feet high, is taken as indicating a big uplift. In the same area, Texas Co.'s No. 1 C. W. Hellen, remains a location. It is reported this area will get four or five additional tests to be drilled by other operators in addition to the two being drilled by Texas Co.

Zapata County

Two more gas wells were completed for the new Lopena Field, Zapata County. R. B. Morrison's No. 1 Vela, block 5, Porcion 20, was completed at 2,225 feet for an estimated 10,000,000 feet of gas per day, with a rock pressure of 910 pounds. Nordan and Morris No. 1 Y. and R., Ramirez, block 7, share 20, of the Jamison Subdivision, porcion 19, was completed at 2,095 feet, and also made an estimated 10,000,000 feet of gas per day, with rock pressure 870 pounds.

DeWitt County

Lefevre and Spice are reported to be moving in a rig for their No. 1 A. C. Wilkins, which is to be a deep test for DeWitt County. Location is in the James Ross Survey, and it is to be drilled to the Cockfield.

Wildcat Operations in Southwest Texas

Week Ending January 19

BANDERA COUNTY

W. B. Kyle et al's No. 1 Duke, 200 ft. NW line, 150 ft. SW line of J. A. Bennett Sur. No. 7.
Waiting on rig.

Plateau Oil Co.'s No. 1 Garrison, G.C.&S.F. Sur. No. 506, 1,500 ft. from N and 2,700 ft. from E lines of survey.
T.D. 1,235 ft.; cmtd. csg. 1,181 ft.; standing.

BASTROP COUNTY

G. L. Cline's No. 1 D. B. Lane 100 ac., 150 ft. N and W lines of Sandifer Sur. Location.

Marts & Beavens' No. 2 Ray Rivera, 1,850 ft. from SE line, 2,050 ft. from NE line of Eliz. Sandifer Sur.
Drlg. shale 1,430 ft.

BEE COUNTY

Dirks Bros.' No. 1 Foley, 330 ft. N and W lines of Kellar Sur.
S.D. 1,659 ft.

Arthur W. Gray's No. 1 Rutledge, 3,322 ft. from N line, 250 ft. from E line of 200-ac. tract in B. Q. Hadley Sur. Location.

Cecil Hagan's No. 1 John R. Scott, 1½ mi. NE of Morgan test.
S.D. 3,550 ft.

R. M. Herod's No. 1 Kimball, 810 ft. from E line, 150 ft. from N line of 110-ac. tract in S. Winship Sur.
Derrick.

Mid-Continent Crude Oil Co.'s No. 2 Kimball (Grayburg area), S. Winship Sur.
T.D. 3,555 ft.; P.B. to 3,300 ft.; milling out.

L. W. Stieren's No. 1 Fox, N offset to Worth's No. 1 Rutledge.
Drlg. 2,020 ft.

R. J. Worthington et al's No. 1 Rutledge, 1,000 ft. from N line and 250 ft. from E line of A. Hadley Sur.
T.D. 3,424 ft.; 7-in. csg. at 3,400 ft.

BEXAR COUNTY

Bender and Krister's No. 1 Evans, 1,200 ft. W line, 200 ft. N line of 313.7-ac. tract in Dela Garza Sur.
Abd. 1,500 ft.; (depth approximate).

Campbell's No. 1 Cantu, offsetting Meador's No. 1 Cantau, 150 ft. SW line, Arocha Sur. No. 15.
Spudded.

N. G. Carter's No. 1 Ruiz, western part of county; (work over).
T.D. 1,710 ft.; standing.

C. A. Ingersoll's No. 1 Mann, S of Von Ormy in John Christopher Sur.
Rigging up.

Jones & Kieffer's No. 1 LaGrane, NW cor. of tract, 210 ft. each way, F. Rolen Sur. No report.

Geo. O'Neil's No. 1 Holly Crouch, NW cor. of 150-ac. tract.
S.D. 1,302 ft.

Duke Phillips' No. 1 Anna Lieck, 450 ft. SE line, 2,500 ft. NE line of 223-ac. tract, J. Liech Sur.
Drlg. 706 ft.

BROOKS COUNTY

Helmrich & Payne's No. 1 Scott and Hooper, 1,320 ft. N and E lines of Blk. 44, Palo Blanco grant.
Set surface csg. 212 ft.

CALDWELL COUNTY

O. Dawn's No. 1 F. Tiller, 250 ft. from N line, 1,000 ft. from E line of 37-ac. tract, in G. Hinds Sur.
T.D. 2,485 ft.; I.P. 150 bbls. per day; shut in for storage.

Kurz Oil Co.'s No. 1 Kurz ranch fee, 4,600 ft. SW line, 4,300 ft. SE line of Barnard Kiecamp Sur.
S.D. 4,106 ft.

DUVAL COUNTY

Buffalo-Texas Syndicate's No. 1 Escobas, 2,777 ft. from N line, 1,944 ft. from W line of 930-ac. tract in San Francisco grant.
No report.

Eckert-Peacock et al's No. 1 C. W. Sutherland, 330 ft. N and W lines of SW¼ NE¼ of Sur. 188.
Drlg. 1,594 ft.

Humble O. & R. Co.'s No. 1 Mucio Vela, 330 ft. S and E lines of N½ of Sec. 42, T.T. Ry. Co. Sur.
Drlg. sticky shale 2,705 ft.

W. C. McBride's No. 2-A Hagist, skidded rig from No. 1-A, Sur. 265.
Coring sand 2,100 ft.

E. R. Thomas' No. 1 Parr, 2,590 ft. S line, 150 ft. E line of Sur. 135, E. H. Valentine Sur.
Drlg. 203 ft.

EDWARDS COUNTY

Will Olhausen's No. 1-B Turney, 660 ft. from W line, 1,622 ft. from N line, Sec. 176, C.C.S.D.&R.G.N.G. Sur.
Dry and abd. 825 ft.

Harry Adams' No. 1 Holman, 1,650 ft. N line, 330 ft. from E line, Sec. 22, C.C.S. D.&R.G.N.G. Sur.
S.D. 602 ft.; showing oil at 520-25 ft. and trying to pull csg.

FAYETTE COUNTY

Clark et al's No. 1 Becker, 750 ft. NW line, 1,300 ft. SW line of 143.74-ac. tract, in A. E. Baker League.
Location.

Ross Fenton's No. 1 Kasper (263-ac.), 3,000 ft from NE line, 1,280 ft. from SW line, of Thos. Green Sur. No. 28.
Location.

FRIO COUNTY

Amerada Pet. Co.'s No. 3 Halff & Oppenheimer, 2,100 ft. from southwesterly NW line, 300 ft. NE line of B. J. Gilman Sur. No. 16.
Derrick.

W. T. Shoemaker's No. 1 M. Roche, 150 ft. SW cor. of Carl Wenzel Sur. No. 139.
Standing 1,517 ft.

GILLESPIE COUNTY

Ed L. Nixon's No. 3 Lindig, 12,694 ft. S line, 1,333 ft. W line, Maria Josepha Guerra Sur. No. 41.
Standing 653 ft.

GOLIAD COUNTY

Magnolia Pet. Co.'s No. 1 Albrecht, 660 ft. N line, 330 ft. SW line of J. P. Reid Sur.
Drlg. 4,930 ft.

(Continued on Page 46)

"THE 'CATERPILLAR' DIESEL HAS BROUGHT US BIGGER PROFITS"

—SAYS AN OIL FIELD HAULING CONTRACTOR WHO HAS INCREASED HIS EARNINGS BY REDUCING HIS POWER COSTS.

● **The economy of the "Caterpillar" Diesel Tractor—and of "Caterpillar" Diesel stationary and portable engines—brings savings on every power job. In the oil fields, around the refineries, on the pipe lines, "Caterpillar" power on the job means getting things done, on time, and at the lowest possible cost. If you have loads to haul, roads to build, wells to service, learn how "Caterpillar" can help you. Caterpillar Tractor Co., Peoria, Ill., U.S.A.**

Moving heavy bull wheels and other equipment in the Bradford, Pennsylvania, field. Winch-equipped, this "Caterpillar" Tractor handles hoisting as well as hauling tasks.

Eighteen Completions in the West Texas District; Three Wildcats in 28 New Locations Staked

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Jan. 21.—There were 18 tests completed in the West Texas district during the week, four were dry, the remaining producers in various pools, although one was a recent discovery in Pecos County. Twenty-eight locations were staked, three for wildcats, and one in the old World or Powell Pool in Crockett County, an area that has seen no drilling for several years.

Gulf Production Co. made location for No. 4 White and Baker, 330 feet from the south and 330 feet from the east of N half Section 46, Block Z, T.C.R.R. Survey, Pecos County. This location is approximately 1⅛ miles east of its recent discovery in Section 4, Block 207, T.C.R.R. Survey. This discovery is carried on the completion report as a 25-bbl. flowing well at total depth of 1,826 feet. The lime pay was topped at 1,824 feet. If No. 4 test makes a well it will prove considerable acreage on the company's solid block held in all directions except south of the discovery, which is on the south line of the block. Two dry holes have been drilled by the company, but none to the northeast and east, consequently the field is expected to run in that direction, and possibly to the south.

Ector County

Penrose and others have made location and moved in standard tools to drill a wildcat test on the west side of Ector County. Location is 2,310 feet from the south and east of Section 31, Block 45, Township 1s, T.&P. Survey. It is approximately 4 miles west and a little north of a dry hole drilled in Section 39 to 4,435 feet, and 5 miles west and south of a dry hole drilled in Section 10 to 4,003 feet. Both tests were drilled by the Exploration Co. several years ago.

Upton Wildcat

Baldridge Oil Co. of Amarillo has staked location for a wildcat test in Section 29, Block 49, Township 4s, T.&P. Survey, western Upton County. Skelly Oil Co.'s old dry hole in Section 32, approximately 1 mile southwest, was drilled to 3,595 feet several years ago, and another wildcat, drilled by Broderick and Calvert of Fort Worth, was recently abandoned 5 miles to the northwest, in Section 22, Block 42, Township 4s. It was drilled to 4,803 feet.

Andrews County

Humble Oil & Refining Co. shot its No. 2 Means, in Section 11, Block A-35, Andrews County, and is now cleaning out after the 390-quart shot. Total depth is 4,558 feet. This test is 2 miles southeast of the producer in the Means Pool, and means either an extension or limiting marker. It is standing with 4,100 feet of oil in the hole, appearing as sure to make a small producer, and as more of a southeastern boundary marker than an extension.

Brewster County

A test is to get under way before February 15 on a location in the NE cor. Section 66, Block 10, G.H.&S.A. Survey, 18 miles northeast of Alpine, in Brewster County. Floyd C. Dodson of San Angelo, and associates, will carry this test to 6,000 feet unless oil, gas or an impregnable formation is struck at a lesser depth. It is on a block of around 10,000 acres leased from the Texas American Syndicate, Kokernot, Harmon, Jackson and Mrs. A. L. Stroud, the latter two being ranchers in the area. A test was previously drilled to 4,101 feet on the Harmon and Jackson ranch, in Section 104, Block 10, southeast of the new location.

Maxwell and others' No. 1 Clapp, in Section 37, Block 26, 1 mile southwest of Kermit, and on the sandy lime trend between the Howe and Halley producing areas, east of the Hendricks Field, Andrews County, is appearing as another probable link between the two widely separated discoveries. It has been bailing 1 bailer of oil per hour from 3,187-95 feet, drilling ahead below 3,200 feet. A shot will probably be given the oil-bearing horizon to bring about a producer.

Schleicher County

M. D. Bryant, of San Angelo, and others have assembled a block of around 4,000 acres near the old test drilled by the Phillips Petroleum Co. and others in Section 35, Block LL, T.C. Railway Survey, Schleicher County, and intend drilling a deep test. The test in Section 35 had several good showings, all of which failed to develop into commercial quantities. It was given up as a dry hole at 6,880 feet in the fall of 1930. One deep test has just been abandoned by Humble Oil & Refining Co. in this county, leaving one drilling and another rigged up and ready to spud. The county has had more deep tests than any other county in the district, every test having at least one good showing of oil.

McCulloch County

H. L. Cravens and W. H. Carpenter, both of Brownwood, are preparing to drill a 2,000-foot cable tool test on the L. Cravens ranch in the G. Dreiss Survey No. 832, 3½ miles northeast of the White Brothers small shallow discovery well completed on their lands in McCulloch County, last week. So far this is the first location announced since the discovery well topped the pay and was bottomed at 670 feet, making 20 bbls. of 37 gravity oil per day. Location of this discovery is in the M. Dewey Survey, about 20 miles northeast of Brady.

Glasscock County

John I. Moore and others have started up again on the unitized test in Section 22, Block 34, Township 2s, T.&P. Survey, on the McDowell ranch in Glasscock County. It has been shut down at 8,501 feet for a couple of week, and is to be carried to an undetermined depth.

Cowden Area

Stanolind Oil & Gas Co. has made two interesting locations in the Cowden area of northern Ector County. One is in the SW cor. Section 21, and the other in the SE cor. Section 24, Block A, about midway between the north and south producing areas which have been extending in nearly every direction and which will now probably be united by these and other intervening tests.

Humble Oil & Refining Co., which recently completed its No. 1 B. S. Walker, between the Ford and Deep Rock areas in Andrews County, for a small well at 4,481 feet after plugging back from 4,520 feet, has treated the well with 3,000 gallons of acid to increase production. It is in Section 6, Block A-43. If the acidizing proves beneficial, the Parker well, recently completed about 5 miles farther east, and other wells in the area, may be treated to stimulate their production.

WICHITA FALLS DISTRICT

The 3-mile north extension to the James Pool, north of Graham in Young County, Pitzer & West and Simms Oil Co.'s No. 1 Gardner, in Section 614, T.E.&L. Survey, which came in last week making 683 bbls. in seven hours on an open flow test after acidizing with 3,000 gallons, has been connected by the Texas Pipe Line Co. The two companies are drilling their acreage, one well to each 80 acres. They have started two more wells on two eighties and are to drill another to the 3,800-foot Breckenridge gray lime pay horizon. Total depth of this well is 3,955 feet.

Pitzer & West are preparing to drill a proposed deep test on the DeLaFosse ranch, in Section 1,549, T.E.&L. Survey, about 4 miles north of the old Ibex Pool in Shackelford County. Derrick has been erected. This proposed deep test was mentioned some time ago, and is one of several deep tests proposed by the two independents of Breckenridge.

Curtis Bell and others have taken an 8,000-acre block 4 miles north of Weatherford in Parker County, centering in the O. Childress Survey. A 3,240-foot dry hole hedges the block on the north edge.

Hammond Oil Co. is preparing to drill a 4,000-foot test in the K.M.A. district, in the northeast corner of Block 22, K.W.V.F.A. Survey, Wichita County. Henry Dyer and others are also to drill a deep test on a 2,540-acre block centering in the northeast corner of the William Sherman Survey No. 101. Spudding is to take place on or before February 1.

Production in the district averaged 62,655 bbls. per day during the week. There were 36 locations staked and 32 tests completed, 15 of which were dry.

PANHANDLE DISTRICT

Activities are picking up in the Panhandle district, although inclement weather has caused many rigs to shut down. There were 10 locations staked during the week, with 11 reported on the completions list, only one a dry hole.

No. 7 Les K. Johnson test, to be drilled on Texas Co.'s 8,700-acre block on the Foard-Cottle County line, falls across the line in the latter county. Location is 1,950 feet west of the west line of Section 35, Block L, S.P. Survey, Foard County, and 500 feet from the north line of the Anglin Survey. The company has three producers on the Foard County side.

Production in the district increased to 61,040 bbls. per day this week, an increase of 3,630 bbls. per day over the past week.

COMPLETIONS IN WEST TEXAS

Ector County

Landreth Production Co.'s No. 1 Johnson, total depth 4,180 feet, plugged back to 4,166 feet, shot 180 quarts from 4,088-4,158 feet, initial production 152 bbls. per day swabbing and flowing. Stanolind Oil & Gas Co.'s No. 13 Cowden, top pay 4,085 feet, total depth 4,290 feet, shot 180 quarts from 4,176-4,255 feet, initial production 946 bbls.

Fisher County

Sinclair Prairie Oil Co.'s No. 4 Steele, top pay 3,233 feet, total depth 3,256 feet, initial production 73 bbls. per day pumping.

Glasscock County

Helm's No. 1 Hilger, dry and abandoned 2,972 feet.

Pecos County

Messenger's No. 2 Rand-Jones, top pay 1,648 feet, total depth 2,447 feet, shot 60 quarts from 1,464-62 feet, initial production 15 bbls. per day pumping. Gulf Production Co.'s No. 3 White and Baker, top pay 1,824 feet, total depth 1,826 feet, initial production 25 bbls. per day flow-

(Continued on Page 44)

Wildcat Operations in West Texas

Week Ended January 18

ANDREWS COUNTY

Fuhrman Pet. Corp.'s No. 2-B Boner, 440 ft. from N and 1,320 ft. from E, Sec. 25, Blk. A-43.
T.D. 1,550 ft.; standardized.

Humble Oil & Ref. Co.'s No. 2 Means, 660 ft. from N and 1,980 ft. from W, Sec. 11, Blk. A-35.
Drlg. 4,558 ft.; show oil 4,450-4,510 ft.

Humble Oil & Ref. Co.'s No. 3 Means, 1,980 ft. from S and 3,300 ft. from W, Sec. 4, Blk. C-45.
T.D. 2,840 ft.; set csg.

Humble Oil & Ref. Co.'s No. 3 Means, 660 ft. from N and 1,997 ft. from E, Sec. 9, Blk. A135.
Rigged up.

Stogner et al's No. 1 Richardson, 1,980 ft. N and 660 ft. E, Sec. 4, Blk. A-37, P.S.L.
Drlg. 410 ft.

York & Harper's No. 1 Hereford Stock Farms, C Labour 12, League 315, Parmer Co. School Lands.
T.D. 970 ft.

BREWSTER COUNTY

Joiner et al's No. 1 McIntyre, 353 ft. from S, 2,390 ft. from E of Sec. 21, Blk. 352, W. M. Mitchell Sur.
S.D. 2,100 ft.; rigged up.

King & Franklin's No. 1 Gage Est., C Sec. 138, Blk. 22, G.H.&S.A. Sur.
S.D. 575 ft.

S. G. Smith's No. 1 Decie, 2,490 ft. from S and E, Sec. 7, Blk. 1.
Drlg. 380 ft.

COCHRAN COUNTY

Kelsey's No. 1 Slaughter, C Labour 36, League 150, R.C.S. Lands.
Location.

West Texas Development Co.'s No. 1 Slaughter, near C of Labour 52, League 149, Randall Co. School Lands.
Derrick

CRANE COUNTY

Strauss' No. 1 Phelps et al, 2,113 ft. from N and 713 ft. from NW Sec. 13, Blk. 31, H.&T.C. Sur.
S.D. 1,936 ft.

Gulf Prod. Co.'s No. 1 Waddell, C NW NW Sec. 4, Blk. B-27, P.S.L. Sur.
Drlg. 1,226 ft.

Gulf Prod. Co.'s No. 9 Waddell, C of NE, Sec. 11, Blk. B-23, P.S.L. Sur.
Location.

Wahlenmaier Pet. Corp.'s No. 1 Kloh, 330 ft. from S and 1,608 ft. from W, Sec. 33, Blk. 43, Twp. 4s, T.&P. Sur.
Rigged up.

CROCKETT COUNTY

Eppenauer Drlg. Co.'s No. 1-C Powell, 1,600 ft. from S and 250 ft. from E, Sec. 53, Blk. BB, G.C.&S.F. Sur.
Location.

Leslie-Hillier et al's No 1 Todd, 1,200 ft. N and 330 ft. E. Sec. 26, Blk. WX, G.C.& S.F. Sur.
Drlg. 450 ft.

Humble Oil & Ref. Co.'s No. 1 Couch, C NW Sec. 3, Blk. QR, G.C.&S.F. Sur.
T.D. 1,112 ft.; underreaming.

CULBERSON COUNTY

Anderson-Pritchard Oil Corp., Magnolia Pet. Co. et al's No. 1 Borders, 1,255 ft. N and 2,305 ft. from W. Sec. 34, Blk. 69, P.S.L. Sur.
Drlg. 800 ft.

Miller Bros.' No. 1 fee, 1,900 ft. from N and 660 ft. from E line of Sec. 21, Blk. 97, P.S.L. Sur.
S.D. 3,145 ft.; show oil 2,107 ft.

Wood et al's No. 1 Hall, 250 ft. from S and 85 ft. from E, Sec. 11, Blk. 54½, 16 miles N of Van Horn, P.S.L. Sur.
S.D. 246 ft.

DAWSON COUNTY

Adams & Turner's No. 1 John Robinson, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 46, Blk. M, E.L.R.R. Sur.
S.D. 3,300 ft.

ECTOR COUNTY

Amerada Pet. Co. et al's No. 1 Holt, 1,980 ft. from S and E, Sec. 20, Blk. A.
Drlg. 4,179 ft.

Atlantic Oil Prod. Co.'s No. 1 T. P. Land

(Continued on Page 45)

Seeking Extension of East Texas Field to the East; Interesting Test in Southeastern Hill County

By L. E. BREDBERG

DALLAS, Tex., Jan. 21.—During the past two weeks nine wildcat tests have been abandoned in the East Texas district. Hunt County had one-third of the number, one test in the county was junked and abandoned instead of drilling to the Woodbine sand as contemplated. Only one wildcat location was staked in the district. Gribbin and others made this on a 140-acre tract of G. W. Martin, in the W. L. C. Butler Survey, 2 miles northeast of Kemp, in Kaufman County.

After carrying No. 1 Davey and Royall to 5,970 feet in the Georgetown lime, topped at 5,948 feet, Gulf Production Co. has plugged back and set 7-inch casing at 5,027 feet intending to complete as a gasser using the gas to drill a second test on the company's Camp Hill block about 1 mile to the south of No. 1 which struck an estimated 50,000,000 feet of gas when drilling at 5,045 feet. No. 1 is in the M. Rogers Survey, approximately 7 miles southeast of Palestine in Anderson County. The second test will be drilled on the F. M. Delaney 14-acre tract in the Phillip Martin Survey.

Hill County

Humble Oil & Refining Co. has carried on some interesting core drill work and is now drilling on its block around Hubbard City in southeast Hill County. The company is apparently seeking a projection parallel to the fault line fields to the east in Navarro and Limestone Counties. No. 1 test is on land owned by the Citizens National Bank of Denison, in the N. T. Roberts Survey, 2½ miles northeast of Mount Calm. It is down 1,200 feet.

Turbeville and others' No. 1 Ivey, in the F. B. Hardy Survey, approximately 7 miles southeast of Fairfield and west of Daniels Oil & Royalty Co.'s No. 1 P. D. C. Ball gasser, cored from 4,830-40 feet, recovering 5 feet of gray ashy sand carrying a slight gas odor. This is one of the most interesting tests in the district due to its proximity to the wildcat gasser around which no other test has been drilled.

Parsons and others' No. 1 Southern Pine Lumber Co., in the M. H. Thompson Survey, in the Rusk area of Cherokee County, looks like a dry hole after testing 5,400 feet of salt water and mud in 15 minutes on a drill stem test at 5,460 feet, with packer set at 4,240 feet. It is now shut down waiting orders. Base of Austin chalk was cored at 5,235 feet.

Log Barge Used

Amerada Petroleum Corp. has had to construct a log barge across the Trinity River from the Cayuga Field on the Anderson County side to move material and equipment to a location the company is to drill on the Freestone side of the river. This barge saves the construction of several miles of corduroy road across the black mud flats on the western side of the stream.

Ben E. Lamb and others' No. 1 Leath, in the L. J. Dooley Survey, approximately 3½ miles east of the nearest production in the Joiner area, Rusk County, encountered a blowout in the Georgetown lime at 3,633 feet and drilling was stopped at 3,640 feet with intentions of setting casing. This blowout is considered especially interesting due to its proximity to the east edge of the East Texas Field, where operators have been drilling interesting extensions, particularly near the Joiner discovery. Whether the test will open a pool flanking the East Texas Field, will connect with it, or prove only a dry hole, is yet to be seen.

Hathaway and others' No. 1 Gray, in the Pirtle area, and east of the south end of the Rusk County producing area, and in Rusk County, has been dropped as a dry hole. Total depth is 4,403 feet. It is southwest of Henderson.

Gulf Production Co.'s test southeast of Palestine, in Anderson County, and the Turbeville test southeast of Fairfield, in Freestone County, are practically the only two interesting tests in the district, unless the Leath test shows more than it has done.

EAST TEXAS FIELD

There were 112 locations staked in the East Texas Field during the week and 72 wells were reported completed. Five of these new wells were completed as "swabbers," one showed 5 per cent salt water and two were put on the pumping list. Rusk County led in number of completions, due to independents and companies reaching out on the east flank of the field in an effort to prove more of their acreage, as has been done during the past few weeks. The field has been extended in several places formerly considered dry, consequently independents have been trying to lease acreage along this edge from those who considered it unproductive.

EAST TEXAS COMPLETIONS

Gregg County

Deep Rock Oil Co.'s No. 12 Jones, top sand 3,534 feet, total depth 3,590 feet, initial production 30 bbls. in 15 minutes through 1-inch choke. Fain & McGaha's No. 9 Clements, top sand 3,568 feet, total depth 3,610 feet, initial production 25 bbls. in 15 minutes. M. E. Gaskill's No. 6 Sam Kay, top sand 3,638 feet, total depth 3,644 feet, initial production 30 bbls. in 15 minutes.

Gulf Production Co.'s No. 22 S. C. Fishburn, top sand 3,507 feet, total depth 3,537 feet, initial production 67 bbls. per hour; No. 39 Sheppard, top sand 3,468 feet, total depth 3,498 feet, initial production 70 bbls. per hour. Humble's No. 20 T. B. Harris, top sand 3,522 feet, total depth 3,583 feet, initial production 69 bbls. per hour. Magnolia Petroleum Co.'s No. 9 I. Zeigler, top sand 3,456 feet; total depth 3,471 feet in shale, initial production 91 bbls. per hour.

B. F. Phillips' No. 2-A-1 L. P. League, top sand 3,624 feet, total depth 3,629 feet, initial production 52 bbls. per hour. Roeser & Pendleton's No. 7 B. Rodden, top sand 3,543-62 feet, total depth 3,563 feet in shale, initial production 24 bbls. in 22 minutes. Shell Petroleum's No. 19 G. W. Richey, top sand 3,557-3,611 feet, total depth 3,620 feet in shale, initial production 32 bbls. in 30 minutes. Stanolind Oil & Gas Co.'s No. 4 Dollahite, top sand 3,672 feet, total depth 3,714 feet, initial production 28 bbls. in 30 minutes.

Texas Co.'s No. 5 Waddell, top sand 3,663 feet, total depth 3,670 feet, initial production 36 bbls. per hour. Tide Water Oil Co.'s No. 9 W. Christian, top sand 3,575 feet, total depth 3,602 feet, initial production 11 bbls. in 10 minutes through 1-inch choke. Washington Oil Co.'s No. 7 Cobb heirs, top sand 3,500 feet, total depth 3,587 feet, initial production 120 bbls. per hour. Yount Lee's No. 8-A Denson, top sand 3,638 feet, total depth 3,660 feet, initial production 60 bbls. per hour through eleven-sixteenths-inch choke.

Gulf Production's No. 34 Brown, top sand 3,572 feet, total depth 3,597 feet, initial production 70 bbls. per hour; No. 60 S. Hilburn, top sand 3,566 feet, total depth 3,592 feet, initial production 75 bbls. per hour; No. 65 S. Hilburn, top sand 3,524 feet, total depth 3,550 feet, initial production 75 bbls. per hour; No. 20 Muckelroy, top sand 3,544 feet, total depth 3,564 feet, initial production 78 bbls. per hour.

Humble Oil & Refining Co.'s No. 16 J. A. Knowles, top sand 3,531 feet, total depth 3,616 feet, initial production 20 bbls. in 20 minutes. Magnolia Petroleum Co.'s No. 29 J. Radford, top sand 3,666 feet, total depth 3,670 feet, initial production 26 bbls. in 15 minutes. Wellington's No. 5 E. L. Walker, top sand 3,547 feet, total depth 3,560 feet, initial production 91 bbls. per hour. Sinclair-Prairie's No. 46-B King, top sand 3,473-95 feet, total depth 3,510 feet in shale, initial production 46 bbls. in 30 minutes.

J. B. Sowell's No. 1-A E. L. Walker, top sand 3,658 feet, total depth 3,661 feet, initial production 50 bbls. per hour. Texas Co.'s No. 12 Dickson, top sand 3,535 feet, total depth 3,620 feet, initial production 79 bbls. per hour. Tide Water Oil Co.'s No. 24 E. L. Bivens, top sand 3,640 feet, total depth 3,647 feet, initial production 10 bbls. in 10 minutes. Wellington Oil Co.'s No. 4 E. L. Walker, top sand 3,548 feet, total depth 3,560 feet, initial production 95 bbls. per hour.

Rusk County

Devonian & Bay's No. 10 W. P. Moore, top sand 3,751 feet, total depth 3,760 feet, Gulf Production Co.'s No. 15 Sexton, top pay 3,700 feet, total depth 3,724 feet, initial production 7 bbls. in 15 minutes. Hanbury's No. 2 Morse, top pay 3,605 feet, total depth 3,642 feet, initial production 100 bbls. per hour.

Humble Oil & Refining Co.'s No. 6 Barton, top pay 3,638 feet, total depth 3,730 feet, initial production 49 bbls.; No. 152 Crim, top pay 3,587 feet, total depth 3,604 feet, initial production 111 bbls.; No. 10 Laird, top pay 3,607 feet, total depth 3,606 feet, initial production 20 bbls. in 15 minutes.

Magnolia Petroleum Co.'s No. 10 Bean, top pay 3,502 feet, total depth 3,580 feet, initial production 10 bbls. in 15 minutes; No. 5 Peterson, top pay 3,625 feet, total depth 3,639 feet, initial production 17 bbls. in 15 minutes. Snowden-McSweney's No. 16 Laird, top pay 3,572 feet, total depth 3,595 feet, initial production 28 bbls. in 10 minutes. Tide Water Oil Co.'s No. 10 Bean, top pay 3,553 feet, total depth 3,612 feet, initial production 10 bbls. in 10 minutes.

Turman Oil Co.'s No. 8-A Brightwell, initial production 3,648 feet, total depth 3,657 feet, initial production 32 bbls. in 15 minutes. Wheelock-Collins' No. 16 Wells, top pay 3,684 feet, total depth 3,700 feet, initial production 20 bbls. per hour through 1-inch choke. Combined Oil Co.'s No. 21 Eaton, top pay 3,730 feet, total depth 3,743 feet, initial production 44 bbls. in 15 minutes. Delta Drilling Co.'s No. 2-B Henson, top pay 3,547 feet, total depth 3,612 feet, initial production 20 bbls. in two hours, swabbing. East Shore Oil Co.'s No. 7 Fox, top pay 3,682 feet, total depth 3,700 feet, initial production 20 bbls. in 20 minutes. Gant-Garvin & Wegner's No. 15 Moore estate, top pay 3,550 feet, total

East Central Texas Wildcats

Week Ending January 19

ANDERSON COUNTY

Gulf Prod. Co.'s No. 1 Dovey & Royall, 330 ft. from NE and NW of 172-ac. tract, M. Rogers Sur.
T.D. 5,969 ft.; P.B. to 5,066 ft.

J. W. Luttes' No. 1 C. McKee, 2,640 ft. from N line of lease and survey and 330 ft. from W line of McKey 800-ac. tract. Derrick.

Tide Water Oil Co. et al's No. 21-A Wells, 4,079 ft. N and 3,333 ft. W of lease, S. Edmondson Sur. (Trinity test).
Drlg. 770 ft.

BOWIE COUNTY

Tex-Ark. Oil Co.'s No. 1 Hamilton Estate, 600 ft. E and 350 ft. N lines, J. Milan Sur., 4 miles S of Red River.
Rigged up.

CHEROKEE COUNTY

Jacksonville O. & G. Co.'s No. 1 H. D. Henderson, 660 ft. from N and W lines of 40-ac. tract out of Tankersley 104-ac. tract, 5 miles NE of Jacksonville on W side of railroad, J. Pineda Sur.
T.D. 752 ft.

Rowan-Nichols Oil Co.'s No. 1 Gilbreath, 460 ft. N and 2,600 ft. from W lines of C. M. Brewer Sur., 1 mile NW of Reklaw.
Rigged up.

E. M. Thomason et al's No. 1 Addis Estate, 250 ft. S of survey and 150 ft. E of railroad, J. T. Jones Sur., 6 miles NW Alto.
S.D. 2,150 ft.

Wilson Stubbs Oil Co.'s No. 1 Rowborts, 450 ft. from S line, 150 ft. from W line of 100-ac. tract, 2 miles SW of Jacksonville, J. D. Wolfin Sur.
S.D. 1,553 ft.

ELLIS COUNTY

Beckner-Finley et al's No. 1 Coker, 2,900 varas along S line of grant from river and 1,700 varas N at R/A, R. De La Pena Sur.
S.D. 527 ft.

FREESTONE COUNTY

Amerada Pet. Corp.'s No. 1 Burk, 851 ft. S and 191 ft. W of river, E. G. Rector Sur. Location.

Burris' No. 1 R. J. Johnson, NE cor. of a 95.5-ac. tract, W. M. C. Jones Sur.
S.D. 1,000 ft.

Tuberville et al's No. 1 Ivy, 2,004 ft. S and 606 ft. E of F. B. Hardy Sur., 7 miles SE of Fairfield.
S.D. 4,831 ft.

GREGG COUNTY

O. T. Clark's No. 1 Williams, 2,100 ft. from S and 2,400 ft. from W of D. Hill Sur., 3 miles NE of Longview.
S.D. 2,985 ft.

HENDERSON COUNTY

Campbell and Chamberlain's No. 1 R. Ansley, 1,724 ft. W and 300 ft. S of SE cor. of M. Matthews Sur., N. H. T. Thompson Sur.
S.D. 894 ft.

Crosby and Pulp's No. 1 M. T. Dobbs, NW cor. of east Dobbs 100-ac. tract, 4 miles E of Malahoff and S of Railroad, George Aldrick Sur.
S.D. 4,048 ft.

HILL COUNTY

Humble O. & R. Co.'s No. 1 Citizen National Bank of Denison, 2,070 ft. W and 525 ft. S of N. T. Roberts Sur., 2½ miles NE of Mount Calm.
Set csg. 983 ft.; Austin chalk 581-865 ft.

HOPKINS COUNTY

D. A. Hale et al's No. 1 L. M. Hall, 200 ft. from N and E lines of 76-ac. tract, 1 mile SE of Miller Gros. A. Caro Sur.
S.D. 1,485 ft.

HUNT COUNTY

Cauble & Thompson's No. 1 Reed, 330 ft. N of northerly NE cor. of C. B. Payne Sur., but in F. Thweatt Sur., 3 miles SE of Greenville.
S.D. 1,615 ft.

KAUFMAN COUNTY

Germany et al's No. 1 Clark, 951 ft. N and 1,000 ft. W of tract, S. Eden Sur.
S.D. 1,728 ft.

Griffins' No. 1 G. W. Martin, 1,660 ft. from W and 250 ft. from N of 140-ac. tract, from W. L. C. Butler Sur., 2 miles NE of Kemp.
Location.

L. P. Kean's No. 1 J. B. Hunter, R. Sowell Sur., 300 ft. from SW and 150 ft. from SE of 50-ac. tract, 4 miles S of Terrell.
S.D. 2,500 ft.

LIMESTONE COUNTY

Chapman's No. 1 Hunt, 200 ft. from N and 350 ft. from W line 34.75-ac. tract, Israel Wood Sur., 3 miles NE of Kosse.
S.D. 1,585 ft.

C. F. Carter's No. 1 Dean, 660 ft. from SE and 330 ft. from SW lines of 75-ac. tract, P. Valella Sur., 3½ miles SW of Mexia.
S.D. 1,717 ft.

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depth 3,595 feet, initial production 30 bbls.

Gulf Production Co.'s No. 11 Maxwell, top pay 3,700 feet, total depth 3,709 feet, initial production 52 bbls. per hour through three-quarter-inch choke; No. 7 Rayford, top pay 3,790 feet, total depth 3,794 feet, initial production 44 bbls. per hour through three-quarter-inch choke; No. 5-A Shaw, top pay 3,722 feet, total depth 3,731 feet, initial production 26 bbls. in 30 minutes. Guthree Corp.'s No. 1 Frederick estate, top pay 3,509 feet, total depth 3,610 feet, initial production 20 bbls. per hour swabbing.

Humble Oil & Refining Co.'s No. 10 Bell, top pay 3,793 feet, total depth 3,813 feet, initial production 56 bbls. per hour through three-quarter-inch choke; No. 2 De Guerin, top pay 3,709 feet, total depth 3,789 feet, initial production 83 bbls. per hour; No. 18 Thompson, top pay 3,660 feet, total depth 3,700 feet, initial production 85 bbls.; No. 6 William, top pay 3,590 feet, total depth 3,694 feet, initial production 52 bbls.

Hunt Production Co.'s No. 6 Plomaa, top pay 3,720 feet, total depth 3,750 feet, initial production 27 bbls. in 11 minutes; No. 7-A Wilson, top pay 3,691 feet, total depth 3,711 feet, initial production 32 bbls. in 16 minutes. Iotex Oil Co.'s No. 3 Alford, top pay 3,806 feet, total depth 3,808 feet, initial production 60 bbls. Jenkins Oil Corp.'s No. 21 Jobe, top pay 3,552 feet, total depth 3,630 feet, initial production 140 bbls. in four hours swabbing; No. 19 Jobe, top pay 3,556 feet, total depth 3,630 feet, initial production 60 bbls. Looney's No. 3 Bradford, top pay 3,535 feet, total depth 3,629 feet, initial production 75 bbls. in six hours pumping.

Marathon Oil Co.'s No. 9 Clay heirs, top pay 3,556 feet, total depth 3,673 feet, initial production 20 bbls. per hour swabbing; No. 12 Graham, top pay 3,626 feet, total depth 3,664 feet, initial production 81 bbls.; No. 18 Ledbetter, top pay 3,672 feet, total depth 3,677 feet, initial production 82 bbls.; No. 15 Mason, top pay 3,653 feet, total depth 3,688 feet, initial production 64 bbls. per hour through 1-inch choke.

Roosth's No. 2 Camp, top pay 3,559 feet, total depth 3,610 feet, initial production 20 bbls. in two hours swabbing. Texas Co.'s No. 12 Pinkston, top pay 3,622 feet, total depth 3,662 feet, initial production 25 bbls. in 30 minutes. Tide Water Oil Co.'s No. 17 Pinkston, top pay 3,773 feet, total depth 3,810 feet, initial production 15 bbls. in 15 minutes. Lone Pine Oil Co.'s No. 3-B Pinkton, top pay 3,656 feet, total depth 3,600 feet, initial production 20 bbls. in 20 minutes.

Smith County

Sun Oil Co.'s No. 9 Layne, top pay 3,681 feet, total depth 3,684 feet, initial production 60 bbls. West's No. 3 Sartain, top pay 3,804 feet, total depth 3,805 feet, initial production 26 bbls. in 30 minutes.

Upshur County

Clarkston's No. 4 O'Byrne, top pay 3,653 feet, total depth 3,696 feet, initial production 10 bbls. per hour, 5 per cent salt water. Gulf Production Co.'s No. 8 Ray, top pay 3,609 feet, total depth 3,614 feet, initial production 20 bbls. per hour, pumping. Simms-Stanolind's No. 33-B Flewellen, top pay 3,761 feet, total depth 3,768 feet, initial production 22 bbls. per hour in 30 minutes. Thibodeaux Oil Co.'s No. 7 Sanders, top pay 3,642 feet, total depth 3,659 feet, initial production 50 bbls. per hour.

WILDCAT AND MISCELLANEOUS COMPLETIONS

Anderson (Cayuga Field)

Tide Water Oil Co.'s No. 19-A Wills, top sand 4,076 feet, total depth 4,084 feet, initial production 100 bbls. in 14 hours.

Freestone County

Hailey & Young's No. 1 Cochran, location abandoned.

Hunt County

Hager and others' No. 1 Dallas Land Bank, dry and abandoned at 3,012 feet.

L. G. Priest's No. 1 Barnett, dry and abandoned at 3,667 feet. G.S.&S. Oil Co.'s No. 1 Oscar Popper, junked and abandoned at 2,865 feet.

Harrison County

Boyd and others' No. 1 Rudd, dry and abandoned at 2,418 feet.

Kaufman County

Lewis and others' No. 1 Williams, dry and abandoned at 504 feet.

Rusk County

Hathaway's No. 1 Gray, dry and abandoned at 4,403 feet.

Smith County

Williams and others' No. 1 Dean, dry and abandoned at 4,820 feet.

Upshur County

Byrd & Frost's No. 1 Pittsburg National Bank, dry and abandoned at 3,932 feet.

Van Zandt

Corely and others' No. 1 Slaton, dry and abandoned at 4,004 feet.

Peden & Olson's No. 4 Brannon, Van Pool, total depth 1,237 feet, initial production 36 bbls. in 24 hours.

Humble Oil & Refining Co.'s No. 7 Fowler, Van Pool, total depth 1,248 feet, initial production 1 bbl. per day.

West Texas Fields

(Continued from Page 42)

ing. Broun & Tippett's No. 9 Tippett, top pay 492 feet, total depth 510 feet, initial production 97 bbls. per day pumping. Courvette Oil Co.'s No. 14 Monroe, dry and abandoned 625 feet.

Jones County

Clay-Lancaster, Atkinson and Sandifer's No. 4 Tiner, temporarily abandoned 2,552 feet. Southern Oil Co.'s No. 1-B Cade, dry and abandoned 2,573 feet.

Loving County

California Co.'s No. 5-A Allen, top pay 4,353 feet, total depth 4,369 feet, shot 120 quarts from 4,317-65 feet, initial production 208 bbls. per day.

Upton County

Gulf Production Co.'s No. 107 McElroy, top pay 2,688 feet, total depth 2,901 feet, shot 300 quarts from 2,700-2,885 feet, initial production 421 bbls.

Ward County

Gulf Production Co.'s No. 16 Hutchings, total depth 2,774 feet, initial production 208 bbls.; No. 53 O'Brien, top pay 2,580 feet, total depth 2,768 feet, shot 160 quarts from 2,612-2,732 feet, initial production 74 bbls.; No. 36 Hutchings, top pay 2,590 feet, total depth 2,745 feet, shot 175 quarts from 2,605-2,745 feet, initial production 293 bbls. California Co.'s No. 20 Durgin, top pay 2,333 feet, total depth 2,535 feet, initial production 510 bbls.

Winkler County

Mathews and others' No. 1 Evans, abandoned location. Mid-Continent Petroleum Corp.'s No. 1 Howe, top pay 2,873 feet, total depth 2,940 feet, initial production 334 bbls. Sinclair Prairie Oil Co.'s No. 1 Cummins, top pay 2,865 feet, total depth 2,940 feet, initial production 90 bbls.

COMPLETIONS IN PANHANDLE

Carson County

Dixon Creek Oil & Refining Co.'s No. 1 McConnell, total depth 3,302 feet, initial production 20 bbls. on pump. Stanolind Oil & Gas Co.'s No. 2-A McConnell, top pay 3,155 feet, total depth 3,301 feet, initial production 371 bbls. per day pumping.

Gray County

Gardner Brothers' No. 2 Barrett, top pay 3,228 feet, total depth 3,300 feet, initial production 338 bbls. per day pumping. Gulf Production Co.'s No. 1 Combs-Worley, top pay 2,960 feet, total depth 3,098 feet, shot 340 quarts from 2,960-3,094 feet, initial production 458 bbls. per day pumping. Sinclair Prairie Oil Co.'s No. 2 Carey, top pay 3,270 feet, total depth 3,285 feet, shot 290 quarts from 3,203-80 feet, initial production 383 bbls. per day pumping. Southern Petroleum Exploration Co.'s No. 3 Noel, top pay 3,175 feet, total depth 3,225 feet, shot 180 quarts from 3,175-3,225 feet, initial production 280 bbls. per day pumping.

Hutchinson County

Caldwell's No. 1 Clifton, dry and abandoned 3,114 feet.

Moore County

Alma Oil Co.'s No. 1 Jones, top pay 3,384 feet, total depth 3,385 feet, initial production 1,900 bbls. per day. Texoma Natural Gas Co.'s No. 3-P Sneed, top gas sand 2,340 feet, total depth 2,821 feet, initial production 22,000,000 feet of gas.

Wheeler County

Piney Oil & Gas Co.'s No. 3 Walker, top pay 2,428 feet, total depth 2,449 feet, initial production 52 bbls. Cub Oil Co.'s No. 1 Johnson, top pay 2,230 feet, total depth 2,235 feet, initial production 20 bbls.

WICHITA FALLS COMPLETIONS

Archer County

Bridwell Oil Co.'s No. 1 Dunham, top pay 1,391 feet, total depth 1,399 feet, initial production 30 bbls. Brown and United Producers Co.'s No. 8 Taylor, dry and abandoned 1,690 feet. Continental Oil Co. and Cullum's No. 18 Falls County, top pay 1,100 feet, total depth 1,107 feet, initial production 34 bbls.; No. 19 Falls County, top pay 1,104 feet, total depth 1,120 feet, initial production 40 bbls. Fain & McGaha's No. 25 Green, top pay 1,178 feet, total depth 1,198 feet, initial production 240 bbls.; No. 26 Green, top pay 1,184 feet, total depth 1,199 feet, initial production 480 bbls. Gray Drilling Co. and Burns' No. 2 Ferguson, dry and abandoned 663 feet. Hamilton's No. 1 Ferguson, dry and abandoned 1,775 feet. Mack Oil Co.'s No. 7 Prideau, dry and abandoned 927 feet. McLaughlin Brothers' No. 1 Rater, top pay 668 feet, total depth 672 feet, initial production 10 bbls. Pace's No. 20 Abercrombie, top pay 1,181 feet, total depth 1,192 feet, initial production 40 bbls. Perkins & Cullum's No. 129 Falls County, top pay 1,121 feet, total depth 1,136 feet, initial production 100 bbls.; No. 130 Falls County, top pay 1,137 feet, total depth 1,158 feet, initial production 125 bbls. Texas Co.'s No. 2 Thomas, dry and abandoned 1,480 feet.

Montague County

Bridwell Oil Co.'s No. 1 Hoben, dry and abandoned 1,490 feet.

Wichita County

Achning and Dudley's No. 2 Herron, dry and abandoned 1,073 feet. Bonner Oil Co.'s No. 7 Munger Brothers, dry and abandoned 690 feet. Omohundro's No. 1 First National Bank, dry and abandoned 1,783 feet. John O'Neil's No. 2 Waggoner, dry and abandoned 1,593 feet. Burns' No. 2 Allen & Kemp, top pay 465 feet, total depth 469 feet, initial production 12 bbls. Burns and Long's No. 22-D Allen & Kemp, dry and abandoned 1,331 feet. Burns' No. 41 Beach, top pay 411 feet, total depth 424 feet, initial production 5 bbls. Petroleum Producers Co.'s No. 66 Allen & Kemp, dry and abandoned 474 feet; No. 67 Allen & Kemp, top pay 1,650 feet, total depth 1,663 feet, initial production 5 bbls. Simms Oil Co.'s No. 9 Chilson, top pay 625 feet, total depth 635 feet, initial production 30 bbls.

Wilbarger County

Waggoner's No. 2-B Waggoner, top pay 2,564 feet, total depth 2,575 feet, initial production 150 bbls.

Young County

Clarida's No. 1 Dyer, dry and abandoned 590 feet. Cato and others' No. 3 Hamilton, dry and abandoned 910 feet. Baker Oil, Inc.'s No. 2 Perkins, top pay 735 feet, total depth 739 feet, initial production 140 bbls. Mrs. Clara Douglas and others' No. 3 Finch, top pay 666 feet, total depth 671 feet, initial production 25 bbls. Rathke Oil Co.'s No. 3 Logan, top pay 556 feet, total depth 565 feet, initial production 3 bbls. Texas Co.'s No. 3 Belknap Coal Co., dry and abandoned 735 feet.

Court Permits Shipment of East Texas Products

AUSTIN, Tex., Jan. 19.—District Judges C. A. Wheeler and J. D. Moore denied the Railroad Commission had power to prohibit the shipment of crude oil products in storage prior to issuance of the commission's order of December 10 requiring approved tenders for movement of refined petroleum.

Oil men estimated approximately 1,500,000 bbls. of oil products would be permitted to move under the decision, entered in the cases of eight plaintiffs who contended the commission acted illegally in attempting to require tenders for shipment of crude oil products in storage at the time the order was issued. The plaintiffs asserted the commission sought to make its orders retroactive.

Plaintiffs included the Tyler (Tex.) Oil & Refining Co., William H. McKain, J. M. Bradshaw, the Phoenix Refining Co., G. H. Burnham, C. D. Archer, Linzie Refining Co. and the Primrose Petroleum Co. State's attorneys asserted the commission was not attempting to make its tender order retroactive and that the products could be moved if legality of the crude from which they were processed could be shown.

Attorneys for the commission offered to show through questioning of F. W. Renshaw, employed by the commission in East Texas, that if the products were from legal oil their source could be determined from crude tenders. Counsel for the plaintiffs replied that the products might have been from crude tops, on which tenders were not required.

The commission presented evidence intended to show that some of the plaintiffs had bought products from refineries which had handled illegal oil. W. H. Dickerson, special agent for the Department of Interior, testified he had obtained affidavits that the refinery from which the Primrose Co. bought its products had handled illegal oil. Under cross-examination, he admitted that no suit had been filed against the refinery. The plaintiff countered with an affidavit that the products tied up were from tendered oil or from crude tops on which tenders were not required.

Petitions of the plaintifs for injunctions restraining the commission from interfering with movement of their products in storage prior to December 10 were granted, with the provision that the commission would have five days in which to inspect the plaintiff's inventories as of December 10. The court announced it would entertain no further petitions for injunctions involving stocks on hand December 10 unless plaintiffs could show they had filed inventories with the commission and had been denied tenders for movement.

The state gave notice of appeal and Judges Wheeler and Moore granted the commission five days in which to inspect the plaintiffs' stocks.

"You have only eight plaintiffs in this case," Judge Wheeler said. "The commission has plenty of employes to make the inspections in five days if it has not already done so."

The court refused the application of the state that the injunctions be held in abeyance pending appeal to the Third Court of Civil Appeals in Austin. Attorneys planned a conference with members of the Railroad Commission and among themselves to decide on exact phrasing of the order which will embody the general decision as enunciated orally and then will be signed.

C. B. WOODS DIES

Claude B. Woods, 52, died at his home in Wichita Falls, Texas, January 17. He had been a resident of Wichita Falls for 31 years. He was general manager of the Woodburn Corp., president of the Ninety-Nine Oil Co. and president of the Holbrooks-Woods Oil Co.

Method and Apparatus for Testing in Field

(Continued from Page 14)

In a new field it is possible for an operator of a Gregory-Modified Test Car to determine the gasoline content of the gases from several wells rapidly and accurately. Furthermore, it is possible for him to accurately predict the volume of different grades of gasoline that can be recovered from the gases.

It is now practical to run quarterly tests with great accuracy. Accuracy of the test assures of mutual fairness to both buyer and seller of the gas. The gasoline plant operator benefits by an exact knowledge of the possible gallonage to be recovered from the gas his plant processes.

Advantages of Equipment

In summation, the Gregory-Modified Test Car Method has numerous advantages to recommend to the oil industry. All necessary equipment for sampling and analyzing is carried in the test car. The equipment can therefore be moved as readily from one point to another as any company automobile. The method is simple and so designed that the present test car personnel is entirely competent to operate it. The equipment for this method is designed to be installed on the present test cars, making full use of present equipment. The accuracy of the laboratory low temperature analytical column is now possible in field and plant testing, with the further benefit of the knowledge of the percentage of the various hydrocarbons. Either gas or gasoline may be analyzed with this method and the results of the analysis are available within a short period of time after sampling. Finally the method is inexpensive, as the dry ice consumption per test is only approximately 5 pounds, at a commonly accepted price of 4 cents per pound.

The apparatus is at present manufactured in Tulsa. The apparatus and refrigerant cycle are protected by patents now pending. I wish to take this opportunity to acknowledge the valuable aid and co-operation given me in the development of the Gregory-Modified Test Car Method by Charles L. Baker of the Texas Co., Tulsa, and Herbert F. Goodenough of the Refinery Supply Co., Tulsa.

J. B. DIGGS, JR., LEADS

The Oklahoma State bar governors announced January 22 that James B. Diggs, Jr., of the legal department of the Gypsy Oil Co., Tulsa, had made the highest grade of those who passed the bar examinations held December 12 to 14, 1934. Mr. Diggs, son of Judge James B. Diggs, is a graduate of Princeton University and received his law degree from the Yale Law School last June.

EASTERN PIPE LINES

Crude oil deliveries by nine eastern pipe lines formerly in the Standard Oil group for the year 1934 totaled 92,629,177 bbls. as compared with 93,163,782 bbls. in 1933, a decrease of 534,605 bbls., accounted for by Buckeye Pipe Line Co., Indiana Pipe Line Co., and New York Transit Co. Daily average for 1934 amounted to 253,778 bbls., compared with 255,243 bbls. in 1933. For December, 1934, six companies showed an increase, bringing the month's total production to 7,350,085 bbls. as compared with 7,143,025 bbls. in the like month last year.

Deliveries for the individual lines in December and the 12 months, compared with 1933, follow (in barrels):

	December		12 months	
	1934	1933	1934	1933
Buckeye	2,428,410	2,576,601	32,627,111	35,481,079
Eureka	567,771	451,089	6,564,549	6,070,193
Illinois	364,562	356,965	5,424,176	4,916,826
Indiana	1,265,090	1,227,476	14,442,786	15,862,026
Nat. Transit	1,192,980	1,017,547	14,563,214	12,875,193
N. Y. Transit	182,455	199,748	2,132,167	2,167,826
Northern	440,640	406,247	5,545,999	5,350,800
Southern	46,916	67,281	945,383	867,829
S. W. Pennsylvania	871,261	838,071	10,384,392	9,572,014
Total	7,350,085	7,143,025	92,629,177	93,163,782
Daily average	237,099	230,420	253,778	255,243

ROCKY MOUNTAIN RUNS

Estimated daily average production for the week ending January 19 follows:

	Bbls.
WYOMING	
Salt Creek	17,550
Big Muddy	1,770
Badger Basin	40
Black Mountain	0
Byron	410
Dallas Derby	800
Dutton Creek	80
Elk Basin	600
Ferris	10
Frannie	300
Garland	230
Grass Creek	1,110
Greybull	10
Hamilton Dome	910
Hudson	280
LaBarge	1,350
Lance Creek	130
Lost Soldier	2,100
Mule Creek	0
Midway	70
Notches	shut in
Oregon Basin	3,300
Osage	700
Pilot Butte	30
Rex Lake	0
Rock River	1,560
South Casper	shut in
Poison Spider	70
Teapot	10
Total Wyoming	33,420
MONTANA	
Buckley-Border	260
Cat Creek	670
Cut Bank	5,040
Dry Creek	0
Kevin-Sunburst	4,900
Lake Basin	40
Pondera	1,310
Total Montana	12,220
COLORADO	
Florence	180
Fort Collins and Wellington	450
Iles Dome	2,230
Moffat	430
Orchard	100
Rangely	90
Tow Creek	190
Total Colorado	3,670
NEW MEXICO	
Artesia	620
Cooper area	1,700
Eunice area	3,870
Hobbs	33,480
Hogback	210
Hospah	shut in
Jal	3,300
Lea area	1,500
Maljamar	2,400
Rattlesnake	750
Table Mesa	90
Total New Mexico	47,920
Total Rocky Mountain area	97,230

D. B. RAMSEY DIES

David Boyd Ramsey, 75, veteran driller and lease foreman of Cleveland, Okla., died January 17. He was born March 1, 1860, near the famous Cherry Run field of Butler County, Pennsylvania, and when a lad of 8 years, worked for oil men in dipping waste oil from the creek. As he grew older he became a roustabout and when a youth of 15 years was a full-fledged driller. He drilled in Pennsylvania, and followed the drill into Ohio, Kansas and came to Oklahoma late in 1905. He went to work December 21, 1905, for D. W. Franchot & Co. and drilled its lease, the northwest of 17-21-8e, in the Cleveland pool of Pawnee County. He made his home on the Franchot lease.

He is survived by his widow and three sons, James, Clyde and Fred, all drillers. Another son, Robert, died several years ago.

E. V. CARY DIES

Edward Vincent Cary, for 50 years an employe of officials of the Standard Oil Co. of New York, 35 of which were spent as private secretary to John D. Rockefeller, Sr., died at his home in Montclair, N. J., January 17, of pneumonia. He was 83 years old.

Humble Oil & Refining Report for Nine Months

The Humble Oil & Refining Co., controlled by the Standard Oil Co., (New Jersey), has reported for the first nine months of 1934 a net profit of $20,906,625 after all charges, taxes and reserves. This was equal to $2.35 a share on the 8,892,414 capital shares outstanding. The report was filed with the Cole Oil Investigating Committee appointed by the last Congress. For the same part of 1933 the company had reported a net income of $20,847,817, or $2.33 a share.

The breakdown of the report showed that for the first nine months of 1934 the crude oil producing department yielded a profit of $13,190,261 and the Humble Pipe Line Co. one of $7,386,583. The refining department lost $69,571 and the sales department $171,132. The crude oil storage department had a profit of $4,237,344. The general administrative expenses are not distributed among the various departments.

According to the tabulation, the earnings of the crude oil department in the first nine months of last year reached the highest point in five years. In 1933 earnings from that source amounted to $6,361,577; in 1932, $7,591,645, and in 1930, $1,946,201, while in 1931 the company had a loss of $880,507. The earnings of the Humble Pipe Line Co. were $11,152,011 in 1933, $16,013,463 in 1932, $16,117,278 in 1931 and $20,504,896 in 1930.

While the refining department showed a profit of $3,226,505 in 1933, that department operated at a loss of $2,620,801 in 1932 and $4,616,524 in 1932. In 1930 the refining department had a profit of $260,858. In the other periods the sales department, excepting 1932, when it had a profit of $67,486, operated at a loss.

West Texas Wildcats

(Continued from Page 42)

Trust, 440 ft. from N and W of SE Sec. 11, Blk. 43, Twp. 1s, T.&P. Sur.
Drlg. 1,846 ft.

G. Farley's No. 1 Connell, 990 ft. from S and 330 ft. from E, Sec. 11, Blk. B-16, P.S.L. Sur.
Standard tools.

Gulf Prod. Co.'s No. 1 Goldsmith, C of NW, Sec. 10, Blk. 44, Twp. 1s, T.&P. Sur.
Rigged up.

Harrison et al's No. 3 Addis, 1,650 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur.
Drlg. 4,055 ft.

International Pet. Corp.'s No. 1 Cowden, 660 ft. from S and E, Sec. 25, Blk. 44, Twp. 2s, T.&P. Sur.
Rigged up standard tools.

Landreth Prod. Co.'s No. 1 Clarence Scherbauer, 660 ft. from S and E lines of Sec. 20, Blk. 44, Twp. 1n, T.&P. Sur.
T.D. 4,236 ft.; plugged back to 4,186 ft.; S.D.

Penroes et al's No. 1 Kloh & Rumsey, 2,310 ft. from S and E, Sec. 31, Blk. 45, Twp. 1s, T.&P. Sur.
Standard tools.

Phillips Pet. Co.'s No. 1 Scharbauer, 990 ft. from S and 330 ft. from E, Sec. 16, Blk. B-15.
Standard tools.

Shell Pet. Corp.'s No. 1 Connell, 1,980 ft. from N and 660 ft. from E, Sec. 12, Blk. B-16, P.S.L. Sur.
T.D. 3,664 ft.; cleaning out and flowing.

EDWARDS COUNTY

Harry Adams' No. 1 Holman, 1,650 ft. from N and 330 ft. from E, Sec. 22, C.C.S.D. &R.G.N.G. Sur.
Show oil 530-35 ft.; T.D. 602 ft.; trying to pull pipe.

EL PASO COUNTY

Mesa Oil Co.'s No. 1 Coronado Valley.
S.D. 1,415 ft.

FISHER COUNTY

Merry Bros. and Perrini's No. 1 Howard, 1,320 ft. from N and 660 ft. from E, Sec. 187, Blk. 2, H.&T.C. Sur.
T.D. 3,098 ft.; setting csg.

Roeser & Pendleton's No. 2 Hill, 2,310 ft. from N and 330 ft. from E, Sec. 203, B.B.B.&C. Sur.
Drlg. 2,645 ft.

GLASSCOCK COUNTY

John I. Moore et al's No. 1 J. S. McDowell, 1,980 ft. from N line and 660 ft. from E line of Sec. 22, Blk. 34, Twp. 2s, T.&P. Sur.
S.D. 8,501 ft.; to carry deeper.

HOWARD COUNTY

Slagel's No. 1 Foster, 990 ft. from S and 330 ft. from W, Sec. 43, Blk. 29.
Shut down.

JEFF DAVIS COUNTY

C. M. Joiner's No. 1 Jones & Coffield, 770 ft. from N and 1,322 ft. from E, Sec. 8, Blk. 3, H.&T.C. Sur.
Standard tools.

JONES COUNTY

Byram et al's No. 1 McWright, 200 ft. from N and 660 ft. from W of SW Sec. 5, Blk. 15, Twp. 1s, T.&P. Sur.
S.D. 1,926 ft.

Campbell et al's No. 1 Enevill, 1,400 ft. from N and 270 ft. from W, Sec. 2, M.E.&P. Sur., ½ mile S of Anson.
T.D. 1,777 ft.; underreaming csg.

Cal-Tex Oil Co.'s No. 1 Smith, 1,400 ft. from S and 2,000 ft. from E, Sec. 25, Blk. 19, T.&P. Sur.
S.D. 100 ft.

Dr. C. E. Johnson's No. 1 Young, 1,800 ft. from N and 750 ft. from W of SE 320 acres of B. Travenio Sur.
S.D. 1,070 ft.

McKenzie & Bland's No. 1 First Nat'l Bank of Anson, 200 ft. from S and E, Sec. 53, D.&S.A. Sur.
Spudded.

Owen et al's No. 1 Johnson & Dunwoody, 3,750 ft. from S and 330 ft. from W, Sec. 6, Blk. 17, T.&P. Sur.
Spudded and S.D.

Richards et al's No. 1 Ransom, 200 ft. from N and E, Sec. 244, B. M. Clopton Sur.
S.D. 750 ft.

Bill Rhodes' No. 1 Wood, 300 ft. from S and E, Sec. 2, Blk. 2, T.&N.O. Sur.
Drlg. 170 ft.

Texas Inland Oil Co.'s No. 1-A Sayles, 85 ft. W and 160 ft. N of NW cor. of Lot 1, but in Lot 7, Blk. 20, T.&P. Sur.
Drlg. 375 ft.

LOVING COUNTY

D. C. Evans' No. 1 W. D. Johnson, 2,310 ft. from N and 1,650 ft. from W, Sec. 12, Blk. 57, Twp. 1, T.&P. Sur.
S.D. 2,030 ft.; sulphur water.

LYNN COUNTY

Hart Oil Co.'s No. 1 Edwards, 220 ft. from N and 200 ft. from W of SE Sec. 39, L.&S.V. Sur.
S.D. 103 ft.

MARTIN COUNTY

Wright & Scott's No. 1 Flannigan, 330 ft. N and E, Sec. 22, Blk. 37, Twp. 1s, T.&P. Sur.
Spudded and S.D.

MITCHELL COUNTY

Harry Adams' No. 1 Mackey, 1,980 ft. from N and 660 ft. from W, Sec. 13, Blk. 29, Twp. 1n, T.&P. Sur.
Drlg. 1,130 ft.; elev. 2,178 ft.

Sawtell & Grueber's No. 1 Morrison
Drlg. 720 ft.

PECOS COUNTY

Gulf Prod. Co.'s No. 4 White & Baker, 2,310 ft. from N and 330 ft. from E, Sec. 46, Blk. Z, T.C. Sur.
Tools.

Messenger's No. 1 Dr. Sibley, 4,930 ft. from S and 990 ft. from W, Sec. 8, Blk. 9, H.&G.N. Sur.
Location.

Shell Pet. Corp.'s No. 1-F Bower-University, 980 ft. from N and 660 ft. from W, Sec. 32, Blk. 16.
T.D. 1,645 ft.; plugged back 1,640 ft.

Shell Pet. Corp.'s No. 1-A Carlson-University, 660 ft. from N and E, Sec. 36, Blk. 16.
Drlg. 1,388 ft.

Trans-Tex. Oil Co.'s No. 1 Caldwell, 330 ft. from E line and 330 ft. from S line of Sec. 27, Blk. 40, Twp. 9, T.&P. Sur.
S.D. 1,301 ft.

REAGAN COUNTY

Dobbs' No. 1 Friend, 2,310 ft. from S and 660 ft. from W of Blk. 3, Wm. Allen Sur., 3 or 4 miles S of Big Lake.
Drlg. 225 ft.

Skelly Oil Co. et al's No. 4-D H. S. Grayson, 1,980 ft. from N line and 660 ft. from W line of Sec. 33, Blk. 8, University Land Sur.
Fishing 9,120 ft.

REEVES COUNTY

J. E. Cunningham's No. 1 Altman, 2,310 ft. from N line and 1,980 ft. from E line of Sec. 1, C. C. Wyatt Sur.
T.D. 3,673 ft.; gas killed; to deepen.

Herbert Oil Co.'s No. 1 Williams & Walker, 5,280 ft. from S and 1,320 ft. from E, Sec. 17, Blk. 6, H.&G.N. Sur.
Material.

RUNNELS COUNTY

Dennis et al's No. 1 Wash, 550 ft. from N and 560 ft. from E of W half, Sec. 123, E.T.R.R. Sur.
Spudded and S.D.

Melrose Oil Co.'s No. 1 L. P. Woods, 150 ft. from NE lines and 3,475 ft. from W line of survey, Willett Holmes Sur. No. 100.
S.D. 2,507 ft.

R. Wells' No. 1 James, 396 ft. from N and 330 ft. from E of James tract in Sec. 16, D. Diaz Sur.
S.D. 1,100 ft.

SCHLEICHER COUNTY

John M. Cooper et al's No. 1 Bert Page, 1,290 ft. from N line, 1,470 ft. from W line of Sec. 40, Blk. L, G.H.&S.A. Sur.
S.O. 5,923-30 ft. and 5,949-52 ft.; S.D. 5,957 ft.

W. C. Proctor et al's No. 1 Judkins & Spencer, 1,920 ft. from S and W of W. W. Russell grant.
Rigged up; standard tools.

SCURRY COUNTY

Coffield & Guthrie's No. 1 Holliday, 2,310 ft. from N and 330 ft. from W, Sec. 120, Blk. 97, H.&T.C. Sur.
Show oil 2,065 ft.; fishing bit 2,960 ft.

McLaughlin's No. 1 Allen, 1,321 ft. from N and 1,338 ft. from E, Sec. 296, Blk. 97.
S.D. 485 ft.

STERLING COUNTY

Merry Bros. & Perrini's No. 1 Standeberry, 1,980 ft. from N and E, Sec. 20, Blk. 30, W.&N.W. Sur.
Spudded.

STONEWALL COUNTY

Merry Bros. and Perrini et al's No. 1 Williams, C SW of SW Sec. 6, Blk. C, A.B. &M. Sur.
S.D. 3,000 ft.

SUTTON COUNTY

Teas et al's No. 1 Mower, 1,980 ft. from S

and W of Sec. 39, Blk. 5, T.W.&N.G. Sur
Drlg. 2,760 ft.

TAYLOR COUNTY

Dunnigan Bros. et al's No. 3 Hunter, 225 ft. from S and 750 ft. from W, Sub. 14, Willis Sur.
T.D. 2,298 ft.; underreaming csg.

TERRELL COUNTY

W. A. Sudderth's No. 1 Phelps, 2,157 ft. from N line and 2,482 ft. from the W line of Sec. 5, Blk. 4-A, G. W. Turley Sur.
T.D. 5,635 ft.

UPTON COUNTY

Baldridge Oil Co.'s No. 1 S. Peck, 440 ft. from S and E. Sec. 29, Blk. 41, Twp. 4s, T.&P. Sur.
Location.

Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W, Sec. 197, Blk. F, C.C.S.D.&R.G.N.G. Sur.
Drlg. 11,015 ft.

Humble Oil & Ref. Co.'s No. 1 Pollock, C of NW, Sec. 4, Blk. M.
Drlg. 160 ft.

King Mountain Pet. Co.'s No. 1 Sherk, 330 ft. from S and W, Sec. 29, Blk. 1, M.K.&T. Sur.
S.D. 800 ft.

Williams & Williams Drlg. Co.'s No. 1 Robbins, 1,600 ft. from S and 1,900 ft. from E, Sec. 4, G.C.&S.F. Sur.
S.D. 2,040 ft.; 1,700 ft. oil in hole.

WARD COUNTY

Alexander's No. 1 Richter, 1,650 ft. from NW, 1,170 ft. from NE line of Sec. 27, Blk. 34, H.&T.C. Sur.
S.D. 1,700 ft.

Bradford et al's No. 1 E. R. Allen, 660 ft. from NW line and 551 ft. from NE line, Sec. 11, H.&T.C. Sur.
S.D. 760 ft.

Caprito's No. 1 Hardage & Wilson, 2,310 ft. from NE and 990 ft. from SE, Sec. 11, Blk. 34, H.&T.C. Sur.
Location.

Cook Drlg. Co.'s No. 1 Wood, 330 ft. from NW and SW, Sec. 5, W. F. Stewart Sur.
T.D. 2,548 ft.

Gulf Prod. Co.'s No. 52 O'Brien.
Drlg. 2,749 ft.

Postellio & Caprito's No. 1 Purcell, 330 ft. from NE and 990 ft. from NW, Sec. 17, Blk. 34, H.&T.C. Sur.
Fishing 2,775 ft.

Rector Oil Co.'s No. 1 Monroe, 660 ft. from SE and NE, Sec. 2, Blk. 1, W.&N.W. Sur.
Drlg. 1,715 ft.

Sageland Oil Corp.'s No. 2 Pure-Bennett 1,650 ft. from NW and 2,310 ft. from SW Sec. 16, Blk. 34, H.&T.C. Sur.
Spudded and S.D.

West Texas O. & R. Co.'s No. 1-C University, 330 ft. from N and E, Sec. 6, Blk. 16, S.D. 574 ft.

WINKLER COUNTY

Gulf Prod. Co.'s No. 1 Wight, 330 ft. from S and E, Sec. 20, Blk. 46, P.S.L. Sur.
Drlg. 850 ft.

Harry Adams' No. 2 Scarborough, 990 ft. from N line and 990 ft. from W line, Sec. 2, Blk. 77, P.S.L. Sur.
Location.

Jeffries et al's No. 1 Brown & Altman, 2,310 ft. from S and W. Sec. 6, Blk. B-5.
T.D. 3,098 ft.; fishing; flows by heads.

Dr. Jeffries et al's No. 1 Underwood, 330 ft. from S and 2,310 ft. from E, Sec. 26, Blk. B-3.
S.D. 800 ft.

J. C. Maxwell's No. 1 Clapp, 2,310 ft. from N and 330 ft. from E, Sec. 27, Blk. 36, P.S.L. Sur.
Drlg. 3,176 ft.

Maxwell's No. 1 Daugherty.
T.D. 2,610 ft.; pulled csg.

R. S. Mathews et al's No. 1 Evans, 1,320 ft. from N line and 1,320 ft. from W line, Sec. 46, Blk. 73, P.S.L. Sur.
S.D. 110 ft.

Mid-Continent Pet. Corp.'s No. 2 Howe, 1,650 ft. from N and 330 ft. from W, Sec. 12, Blk. 26.
Rotary.

Richardson's No. 1 Walton, 1,010 ft. from S and 330 ft. from W, Sec. 1, Blk. B-3.
S.D. 189 ft.

Sid Richardson's No. 1 Hill, 1,980 ft. from E line, 660 ft. from S line, Sec. 18, Blk. B-11, P.S.L. Sur.
T.D. 3,329 ft.; set csg.

Sayre Oil Co.'s No. 1 Leck, 330 ft. from S and E, Sec. 2, Blk. 26, P.S.L. Sur.
Drlg. 2,678 ft.

Sayre Oil Co.'s No. 2 Howe, 330 ft. from N and W, Sec. 12, Blk. 26, P.C.I. Sur.
Location.

Skelly Oil Co.'s No. 2 Halley, 1,320 ft. from N and 2,200 ft. from E, Sec. 25, Blk. B-11, P.S.L. Sur.
Set csg. 2,825 ft.; drlg. plug.

Sinclair Prairie Oil Co.'s No. 2 Cummins, 330 ft. from N and E, Sec. 11, Blk. 26, P.S.L. Sur.
Drlg. 1,182 ft.

Sun Oil Co.'s No. 1 Halley, 2,200 ft. from N and 440 ft. from E, Sec. 24, Blk. B-12, P.S.L. Sur.
Location.

Texas Panhandle Wildcats

Week Ending January 21

CARSON COUNTY

McClintock et al's No. 1 Jordan, 660 ft. N. 413 ft. W Sec. 105, Blk. 4, I.&G.N. Sur.
Drlg. 2,586 ft.

Phillips Pet. Co.'s No. 1 Cooper, 330 ft. S and E, Sec. 4, Blk. 9, I.&G.N. Sur.
Drlg. 1,011 ft.

CHILDRESS COUNTY

Humble O. & R. Co.'s No. 1-A Smith, 1,288 ft. S and 1,407 ft. W, Sec. 14, Blk. 9, H.&G.N. Sur.
Location.

COLLINGSWORTH COUNTY

Andrews & Kerr's No. 1 Gideon-Bell, C NW NE Sec. 6, Blk. 13, H.&G.N. Sur.
T.D. 2,201 ft.; P.B. to 2,180 ft.; shot; now fishing.

COTTLE COUNTY

Texas Co.'s No. 7 Les K. Johnson, 1,950 ft. W of W line of Sec. 35, Blk. L, S.P.R.R., Foard County, and 500 ft. N of Anglin Sur.
Cellar.

DALLAM COUNTY

Eben Warner's No. 1 Jarbie, 1,520 ft. from S line, 415 ft. from W line, Sec. 2, B.&B. Sur.
S.D. 3,200 ft.; may abandon.

GRAY COUNTY

Cambrian Oil Co.'s No. 1-B Saunders, 330 ft. N and E of S½ of NE¼ Sec. 4, Blk. 1, B.S.&F. Sur.
Location.

Irish-American Oil Co.'s No. 1-B Morse, 990 ft. S and 330 ft. E, W½ NE Sec. 54, Blk. 25, H.&G.N. Sur.
Drlg. 1,905 ft.

Plains Holding Co.'s No. 1 Morse-Gulf, 330 ft. S and W, Sec. 57, Blk. 25, H.&G.N. Sur.
Material.

Shell Pet. Corp.'s No. 1 Haggard, 330 ft. S and E of NW¼ Sec. 112, Blk. 3, H.&G. N. Sur.
Rotary rig.

Stanolind O. & G. Co.'s No. 1 Cutter, 330 ft. N and E, W½ NE Sec. 173, Blk. 3, I.&G.N. Sur.
Drlg. 1,100 ft.

Texas Co.'s No. 1-C Taylor, 1,325 ft. from N and 1,320 ft. from W, Sec. 52, Blk. B-3, H.&G.N. Sur.
T.D. 3,006 ft.; flowed 106 bbls. in 6 hrs.

Texas Co.'s No. 1 Taylor, 990 ft. S and W of Sec. 81, Blk. B-2, H.&G.N. Sur.
Drlg. 2,740 ft.; gas at 2,585 ft.

HUTCHINSON COUNTY

Dixon Creek O. & Rfg Co.'s 1-C Johnson, 1,020 ft. N, 330 ft. from W of most westerly NW cor. of J. T. Williams Sur.
Drlg. 2,110 ft.

Huey et al's No. 1 Christian, 220 ft. from S and 330 ft. from W, Sec. 32, Blk. Y, A.&B. Sur.
Drlg. 3,133 ft.

Stekoil's No. 2 G. W. Whittenburg, 330 ft. S and W of H. Prewitt Sur.
T.P. 2,880 ft.; T.D. 2,974 ft.; put on pump.

Stanolind O. & G. Co.'s No. 1 Kinzer, 330 ft. S and E, Sec. 148, Blk. 3, T.&N.O. Sur.
Material.

Texilvania Oil Co.'s No. 1 Thompson, 440 ft. N and 2,735 ft. E, Sec. 15, Blk. M-23, T.C. Sur.
Location.

MOORE COUNTY

Texoma Nat. Gas Co.'s No. 1 Haas, 2,673 ft. N, 1,791 ft. E, Sec. 20, Blk. P.M.C., E.I.R.R. Sur.
Drlg. 3,300 ft.; 18,510,000 ft. of gas at 2,840-3,270 ft.

Texoma Nat. Gas Co.'s 1-G Taylor, 1,302 ft. N and 2,620 ft. E Sec. 21, Blk. M-1, Wheatley Sur.
Drlg. 2,842 ft.

OCHILTREE COUNTY

U. S. Oil Corp.'s No. 1 W. R. Norris, 330 ft. S and 990 ft. E, Sec. 212, Blk. 43, H. &T.C. Sur.
Rigging up rotary.

POTTER COUNTY

U. S. Bureau of Mines, No. 2-A Bivins, C NE Sec. 22, Blk. 8, B.S.&F.
Drlg. 3,475 ft.; 9,000,000 ft. of gas at 3,208-3,442 ft.

RANDALL COUNTY

English et al's No. 1 Oxnard.
T.D. 5,610 ft.; recmtd. csg.

WHEELER COUNTY

Carver Drilling Co.'s No. 1 Rock Island, 1,600 ft. from S line, 2,310 ft. from W line, Sec. 47, Blk. 13, H.&T.C. Sur.
T.D. 2,170 ft.; set csg.

Cloud et al's No. 1 Farren, 330 ft. N and W, NE SE Sec. 34, Blk. 24, H.&G.N.
Drlg. 2,617 ft.

Ben G. Barnett's No. 1 Boren, NW cor. NE Sec. 24, Blk. 13, H.&G.N. Sur., 11 miles E and S of Shamrock.
Drlg. 2,122 ft.

Johnson et al's No. 1 Grogan, 438 ft. N and 150 ft. W, Sec. 57, Blk. 23, H.&G.N. Sur.
Drlg. 1,440 ft.

LeFors Pet. Corp.'s No. 1 Perkins, 330 ft. from S line, 330 ft. from W line, Sec. 54, Blk. 24, H.&G.N. Sur.
Rig.

Martin & Son's No. 1 Plummer, 330 ft. N and E NW SW Sec. 45, Blk. 45, H.&G.N.
T.D. 2,640 ft.; to comp. for gas well.

Mudge Oil Co.'s No. 1 Dougherty, C SW Sec. 98, Blk. 23, H.&G.N. Sur.
Drlg. 2,220 ft.

Reno Oil Co.'s No. 1 Mankins, SW SE SE Sec. 54, Blk. 13, H.&G.N. Sur.
T.D. 2,216 ft.; 50 bbls. oil with 10 bbls. wtr. per day.

Rogers' No. 1 Timberlake, 330 ft. from N and W of NE NW Sec. 36, Blk. 13, H. &G.N. Sur.
Drlg. 646 ft.

Smith Bros.' No. 1 Johnson, 330 ft. N and W, Sec. 34, Blk. 24, H.&G.N. Sur.
Drlg. 1,887 ft.

Underwood et al's No. 1 Roach, 330 ft. N and E, Sec. 27, Blk. 24, H.&G.N. Sur.
Drlg. 1,960 ft.

East Central Texas Wildcats

(Continued from Page 43)

Doughtry et al's No. 1 S. Welch, 150 ft. from NW and 900 ft. from NE of 77.64-acre tract in A. Varilia Sur., 4 miles W of Groesbeck.
T.D. 852 ft.

Pure Oil Co.'s No. 1 Rogers, 860 ft. S and 2,700 ft. W of 330-ac. tract, P. Villeria Sur.
Drlg. 826 ft.; gas sand 694-779 ft.

Schultz' No. 1 Roy Ward, NE cor. of 73.3-ac. tract, 5 miles W of Mexia Field, Harrison York Sur.
Derrick.

V. V. Waite's No. 1 Barrow, 650 ft. from S and 950 ft. from E line of 320-ac. tract, W. G. McKenzie Sur., 3½ miles NW of Thornton.
Derrick.

NACOGDOCHES COUNTY

Murray Oil Co.'s No. 1 C. B. Watkins, 150 ft. from N line and 330 ft. from NW lines of 160-ac. tract, 3 miles S of Caro, H. Y. Bailey Sur.
S.D. 3,925 ft.

Wells et al's No. 1 Z. Ramblin, 900 ft. N and 330 ft. W of SE cor. of tract and survey, J. Simpson Sur., 12 miles NE of Nacogdoches.
S.D. 135 ft.

NAVARRO COUNTY

Bennett Brothers' No. 1 T. E. Stewart, 150 ft. from NE line of lease, 10 miles SW of Corsicana, Wm. R. Bowen Sur.
S.D. 1,136 ft.

R. B. Codding et al's No. 1 Lela Kent, 450 ft. from S line and center of N and S lines of lease, 3 miles NE of Chatfield, C. B. Emmons Sur.
S.D. 1,550 ft.

W. J. Keeling et al's No. 1 J. F. Rushing 484 ft. from N line and 150 ft. from W line of 184-ac. tract, 6 miles SW of Richardson, Henry Ford Sur.
Set csg. 2,864 ft.

McCullough et al's No. 1 C. Berry, 330 ft. from SE cor. of 35-acre tract, 1 mile W of Dawson, William Moss Sur.
S.D. 625 ft.

Syam Oil Co.'s No. 1 Love, 330 ft. out of SE cor. of J. L. Strother Sur.
Pecan 2,206-2,320 ft.; top Austin 3,080 ft.

RED RIVER COUNTY

Abercrombie & Harrison's No. 1 Roberts, 4,500 ft. from E and 500 ft. from N line of John Ware Sur., 3 miles N of Clarksville.
Drlg. 1,178 ft.; elev. 429 ft.

Dinger's No. 1 W. T. Norris, 1,000 ft. from S and 1,900 ft. from W of 400-ac. tract, Jos. Guest Sur., 1 mile S of Detroit.
Derrick.

RUSK COUNTY

George Hudson et al's No. 3 Jeff Phillips 150 ft. from N line of survey and 700 ft. from W line of 100-ac. tract, 4 miles SE of Minder N. Villaria Sur.
S.D. 3,673 ft.

Ben Lamb's No. 1 H. Leath, 330 ft. out of NW cor. of 185-ac. tract in L. J. Dooley.
Circulating 3,640 ft.

Richardson's No. 1 Wood.
Derrick.

SMITH COUNTY

Deck et al's No. 1 Dendall, 330 ft. from S and W of 55-ac. tract, J. Williams Sur., 3 miles E of Van Field.
S.D. 1,100 ft.

Fair et al's No. 1 Rushing, 1,000 ft. SE of old hole, 1½ miles SE of Whitehouse.
S.D. 4,673 ft.

VAN ZANDT COUNTY

Delcambre et al's No. 2 Crim, 400 ft. from S and 150 from E lines, Nacogdoches Co. School Lands.
T.D. 1,327 ft.

Pet. P. L. & Storage Co.'s No. 4 Mrs. S. McGee, 450 ft. S of N line and 155 ft. E of W line of 53.4-ac. tract, Blk. 20.
S.D. 1,268 ft.

Florence Oil Co.'s No. 2 Sanger, 316 ft. W of SE cor. and 151 ft. S of S line of Pure-Blackstock lease, John Walling Sur.
Rig.

Gillum and Allen et al's No. 1 A. T. Bass, 150 ft. from W line and 150 ft. from N line of 10-ac. tract, William Hart Sur.
S.D. 1,700 ft.

Green and Winn's No. 1 Eaton, 330 ft. out of most westerly SW cor. of J. Wilson Sur., 2 miles SE of Martin.
Location.

J. Beren et al's No. 1 Bryant, 483 ft. N of same operator's dry hole, Nacogdoches County School Land Sur.
S.D. 1,325 ft.

Lane-Tex Co.'s No. 1 Listenbee, 150 ft. N and E of tract, Wm. Daniel Sur.
S.D. 1,279 ft.; ran liner.

Martin-Evans' No. 2 Palmer, 544 ft. from S and 686 ft. from E of 69.5-ac. tract, Nacogdoches County School Land.
Spudded.

Overton Ref. Co.'s No. 5 Carter, 1,028 ft. S and 300 ft. E of No. 2, Wm. Daniels Sur.
T.D. 2,960 ft.; swabbing.

Miller et al's No. 1 J. M. Palmer, 150 ft. from S and E lines of 69-ac. tract, Nacogdoches County School Land Sur.
S.D. 1,150 ft.; drlg. plug.

Peden and Olson's No. 1 J. M. Palmer, 200 S of No. 2 and 140 ft. from W line of tract, J. Goodman Sur.
S.D. 1,288 ft.

M. Rouch et al's No. 1 Bearden & Palmer 150 ft. out of SE cor. of 61-ac. tract, Nacogdoches C.S.L.
S.D. 1,237 ft.

Wadley's No. 1 Carnes, 500 varas N and 1,000 varas E of most northerly SE cor. of 533-ac. tract, S.P. Sur.
Top Austin 3,721 ft.; drlg. 3,895 ft.

WOOD COUNTY

Bryant & Spear's No. 1 Consumer Lignite Co., 150 ft. out of most westerly NE cor. of J. F. McMahon Sur., SE of Alba.
Drlg. 396 ft.

Southwest Texas Wildcats

(Continued from Page 40)

GUADALUPE COUNTY

J. W. Burrows' No. 1 Beuhring, 1,000 ft. S line, 750 ft. W line of Jos. Clements Sur., SW Darst Creek Field.
Location.

Diamond Half Oil Co.'s No. 1 Hoffman, 660 ft. from NE line, 1,850 ft. from SE line of Wakefield and Stewart Surveys.
Spudded.

W. J. Walton's No. 1 Mrs. C. Harrison, 330 ft. N and E lines of 100-ac. tract, Wakefield Sur.
Location.

H. H. Weinert et al's No. 1 Sylle Schmidt, beginning at most southerly S line of E. Irhof 337-ac. tract, NW 700 ft. thence at R/A 300 ft., Wakefield Sur.
Drlg. 2,360 ft.

HIDALGO COUNTY

Clay, Spencer & Hood's No. 1 Brooks & Showers, 330 ft. N and E lines of Lot 4, Blk. 26, Por. 79-80.
Drlg. 1,618 ft.

Carpenter & Vernon's No. 1 G.L.&C.C., 330 ft. from E line of Porcion 100, 2,350 ft. S of Highway No. 4.
Set surface csg. 126 ft.

Hardy & Lynch's No. 1 Southland Dev. Co., 330 ft. N and W lines, Blk. 14, Por. 17. Spudded and S.D.

Harrison, Medline et al's No. 1 G. L. & C. Co., 950 ft. W line, Por. 42, 330 ft. N of Old Military Road, in Por. 43.
Coring 1,850 ft.

Kingwood Oil Co.'s No. 1 Daskom, 215 ft. W line, 218 ft. N line of Lot A-23, Blk. 49, Porcion 41.
Drlg. 3,420 ft.

Kingwood Oil Co.'s No. 1 Doughty, 1,214 ft. from N line, 3,750 ft. from W line of Tract 90, in San Salvador del Tule grant.
S.D. 1,850 ft.

Maxwell-Young's No. 2 King, 175 ft. N and E lines of Lot 8, Blk. 11.
T.D. 875 ft.; to D.D.

Union Sulphur Co.'s No. 1 John C. Engleman, 400 ft. S and W lines, Lot 8, Blk. 79, Mestenas tract.
Drlg. 7,470 ft.

Downey & Morton's No. 1 Daskom, 450 ft. from E line, 55 ft. from S line of Blk. 34, Por. 45.
Resumed drlg. 2,312 ft.

Gato Oil Co.'s No. 1 Brocks & Showers, 500 ft. W line, 400 ft. N line of Tract 8, Blk. 26, Por. 79.
Coring hard lime, sand streaks 4,287 ft.

Union Sulphur Co.'s No. 2 American Rio Grande L. & I. Co., 400 ft. from S and E lines of tract, Blk. 86, North Capisalle district.
T.D. 8,044 ft.; abd.

JIM HOGG COUNTY

Miller & Pippin's No. 1 Yeager, 527 ft. S line, 150 ft. E line of Blk. 6, Sur. 20.
Rigging up.

G. H. Von Rossun's (John D. Norwood) No. 1 C. W. Hellen, 330 ft. N and W lines, Sur. 48.
T.D. 1,338 ft.; S.D. for orders.

J. M. Shugart's No. 1 R. Holbien, 100 ft. from E line, 330 ft. from S line of Blk. 55, Sur. 17 of Holbien Subd., of Las Animas grant.
S.D. 490 ft.

Texas Co.'s No. 1 Guiterrez, 2,310 ft S line, 330 ft. W line of Sur. 164.
Drlg. 2,803 ft.

Texas Co.'s No. 1 C. W. Hellen, 5,742 ft. S line, 6,562 ft. E line of Sur. 150.
Location.

JIM WELLS COUNTY

O. W. Killam's No. 4 Wade.
Drlg. 2,102 ft.

KARNES COUNTY

American Liberty Oil Co.'s No. 1 Von Roeder, 330 ft. from NE and SE lines of 204-ac. tract in Johnson Sur.
W.O.C. after testing 400 lbs. pressure in Petius sand at 3,350-74 ft.

E. E. Green's No. 1 Miss Olive Henke, 1,440 ft. from SW cor. N along W line, thence at R/A 330 ft., Seguin grant.
Sand 1,505-09 ft.; S.D. for repairs.

R. W. Norton's No. 2 Choate, 1,020 ft. from N cor. of 320-ac. tract, 330 ft. SW of NE line, A. Storey Sur.
Ready to move in.

KERR COUNTY

Emerald Oil Co.'s No. 1 Whitworth, 1,189 ft. from S line and 1,333 ft. from E line of Sec. 1,439, of the H.E.&W.T. Sur.
T.D. 675 ft.; preparing to resume drlg.

Jeff Love and Eastland Oil Co.'s No. 6-B Jeff Love, 1,500 ft. SE of No. 1 and 1,450 ft. from SE cor. and 300 ft. from N line of Sec. 1,591.
1,550 ft. of oil in hole; T.D. 3,530 ft.; bailing.

LEE COUNTY

Jas. E. Pederson's No. 1 Turner, 1,860 ft. from N line, 150 ft. from E line of tract, David Hudson Sur.
Drlg. 6,430 ft.

LIVE OAK COUNTY

Arthur, Brunson & Hall's No. 1 W. P. Howard, 150 ft. from W line, 2,400 ft. from N line of 200-ac. tract, in B. Ayers Sur.
Rigging up.

Baugh & McMillan's No. 1 Walton & Campbell, 1,500 ft. NE line and SE line of D. R. Fant Sur.
Drlg. 1,129 ft.

Berry & Hayes' No. 1 C. L. Terrell, 1,600 ft. N line, 330 ft. E line of Henry Sur.
Location.

Henderson Coquat et al's No. 1 Little, 1,320 ft. SE of S cor. of M. M. Shipp Sur. and 330 ft. N of S line.
Drlg. 5,250 ft.

Loma Oil Co.'s No. 1 O. M. Withers, 330 ft. S and W lines of tract in T. B. Sparks Sur.
Coring 1,010 ft.

Luling O. & G. Co.'s No. 1 Rex, C of SW¼ of G.H.&H. Sur., Abst. 197, 3 miles S of Mileska.
Rigging up.

MAVERICK COUNTY

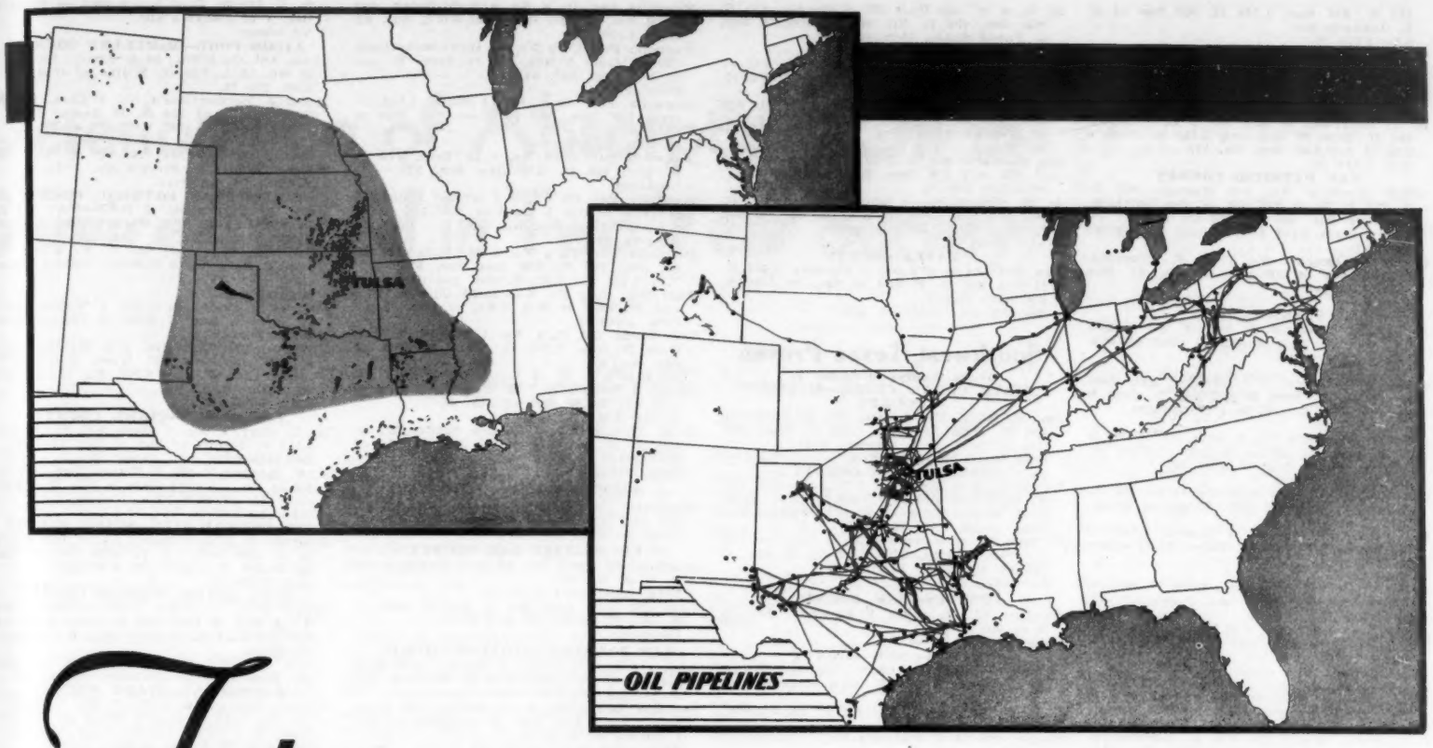
Escher & Andrews' No. 1 Mathews, NW cor. of B. C. Flowers Sur.
S.D. 480 ft.

MEDINA COUNTY

Scoggins & Sanders' No. 1 L. W. Burrell, 150 ft. from E line, 1,750 ft. from N line of M. E. Gage Sur. 395.
S.D. 1,880 ft.

MILAM COUNTY

C. F. Drake et al's No. 1 Standard Coal Co.



Tulsa's position as "Oil Capital of the World" *becomes stronger each year*

Automobile companies make an "Automobile Capital", rubber companies a "Rubber Capital", oil companies an "Oil Capital".

The Wall Street Journal, in an article about Tulsa, says: "Forty-four, or roughly half, of the big American oil companies, have their headquarters in Tulsa. More than 500 smaller oil companies maintain their offices in Tulsa."

Not only is the foregoing approximately correct, but the number of important oil companies in Tulsa is *growing each year*, as additional companies recognize the obvious advantages of being located at the center of world oil activity. Within the past 4 or 5 years some of Tulsa's major acquisitions have been recorded, including operating headquarters of the Consolidated (Sinclair-Prairie) Oil Corporation, general headquarters of the Stanolind Oil & Gas Company, production headquarters of the Tidewater Oil Company (moved from New York), and Mid-Continent Division of the Shell Corporation (moved from St. Louis).

Tulsa today has more major oil company headquarters offices than are found in all other oil centers of the Southwest combined.

The two main factors in Tulsa's strength are pictured above. As regards Production, Tulsa's position is seen to be central in the great Mid-Continent area. Tulsa producing companies are major operators in all Mid-Continent fields, as well as in all Gulf Coast and Rocky Mountain areas. The Mid-Continent area produces more than 60% of the nation's oil, and about 40% of the entire world's oil. Tulsa is the major headquarters city for this tremendous production activity.

The natural result is seen in the map of the nation's pipe line and refining network. Tulsa is the hub of this great system, geographically. Much of the ownership, management and control of this great system is centered at Tulsa.

Equipment purchasing for the production, pipe line, refining and marketing activities controlled from Tulsa, also takes place at Tulsa. This fact has brought many equipment factories, branch offices, and warehouses to Tulsa. During the past year 60 additional manufacturers of oil industry supplies and equipment opened manufacturing plants, warehouses, or sales offices in Tulsa, or secured resident sales representation here.

The Tulsa Chamber of Commerce will be glad to answer questions and to prepare detailed reports for firms considering Tulsa as a manufacturing or distributing point. Your inquiry is cordially invited.

TULSA

Oil Capital of the World

970 ft. SW line, 1,700 ft. SE line of G. L. Johnson Sur.
S.D. 1,575 ft.
Second Natl. Bank's No. 1 B. P. Ward, 150 ft. SW line, 950 ft. SE line of 100-ac. tract, L. Taylor Sur.
Drlg. lime 2,959 ft.

REAL COUNTY

H. J. Heartwell et al's No. 2 L. J. Maby, 694 ft. from W line and 2,153 ft. from s line of A.B.&M. Sur. No. 175.
T.D. 2,357 ft.

SAN PATRICIO COUNTY

Allied Minerals' No. 1-A Ramsey, 466 ft E, 220 ft. N of SW cor. of the North B. Giddings Sur. on a 1,000-ac. tract.
Sandy shale 2,642 ft.; moving in heavier rig; S.D.
Lonnie Glasscock's No. 1 M. F. Timmons, 330 ft. out of SE cor. of Blk. 27, San Patrico townsite.
No report.

STARR COUNTY

Armstrong, Emanuel & Adams' No. 1 S.C. C.C., 330 ft. from S and E lines of Blk. 57, Porcion 88-89.
Drlg. 2,100 ft.
C. R. Borah's No. 1 A. Guerra, San Jose grant, 330 ft. from N and 150 ft. from E lines of Sec. 6 (NE part of county).
S.D. 2,687 ft.
John H. Clopton's No. 1 Roos, 13,155 ft. N of Highway 4, along E line of Por. 92, 3,300 ft. N, 80 deg. 45 min. W.
Cmtd. surface csg.
Crawford et al's No. 1 Hicks et al, 150 ft. SE and NE line of NW, Perdernal grant.
Drlg. 1,049 ft.
Dainwood Oil Co.'s No. 1 Guerra, 5,280 ft. W line and N line of Share 24, Porcion 70-71-72.
Location.
R. H. Vise's No. 1 Carruth, 3,690 ft. S line, 3,300 ft. W line, Share B-1, Porcion 91-92.
Drlg. 3,003 ft.
J. T. Kyle et al's No. 1 G.L.&C.C.O., 330 ft. midway between N and S lines of Lot 4, Porcion 100.
Location.
Morris & Bryan's No. 1 Hicks & Hicks, 660 ft. NE line, 2,000 ft. SE line of 500-ac. tract, Pedernal grant.
Drlg. 1,103 ft.
C. L. Smith et al's No. 1 J. M. Longfellow, 330 ft. out of NW cor. of Sur. No. 281.
Drlg. 5,125 ft.
Conroe Drlg. Co.'s No. 1 Guerra, 330 ft. from NE and SE lines of Blk. 35, J. N. Crawford Subd., Por. 56, Juriadiction of Mier.
Drlg. 2,020 ft.
Henshaw's (Smith & Weston) No. 1 M. M. Garcia, Blk. 9, Sur. 903.
Abd. 4,009 ft.
Dale Sneed's No. 1 Y. and V. Guerra, 330 ft. W line of Por. 68, 330 ft. S line of 1,000-ac. block of N end of Por. 92, in Por. 68.
Spudded.
E. L. Younkin's No. 1 Kelsey Bass, 330 ft. from S line, 7 ft. from W line of Blk. 19, in Porcion 87.
Preparing to resume drlg. 2,572 ft.

TRAVIS COUNTY

Humble O. & R. Co.'s No. 3 Buck Christian, 2,150 ft. SW line, 2,300 ft. NW line of J. P. Kemp Sur.
Drlg. Serpentine 741 ft.
Mimms, New & Anderson's No. 1 Bohm, 1,250 ft. SW along NW line of Bohm tract from N cor. and 150 ft. NW in S. Del Valle Sur.
S.D. 510 ft.
C. A. Stubbs' No. 1 Julius Kerlin, 530 ft. SW line, 450 ft. NW line of 123-ac. tract in I. Lindsay Sur. No. 61.
Standing 709 ft.
Title et al's No. 1 Johnson, 330 ft. each way from cor. of 50-ac. tract in Kimbro area.
Drlg. chalk 955 ft.

WEBB COUNTY

Detterhaim & Jones' No. 1 M. Jones, 600 ft. E line, 1,620 ft. S line of Sur. 1,640.
Abd. 445 ft.
Mills Bennett's No. 1 Slator, 330 ft. SW and NW lines of Blk. 46, Mission Oil Co. Subd., Borrego grant.
Drlg. 402 ft.
Dirge Hordee's No. 1 Slator, 1 mile SW of Mills Bennett's No. 1 Slator.
Rigging up.
Payne et al's No. 1 Hoggtorp, Blk. 6, Sur. 1,110, N of Oilton.
Spudded and S.D.

WILLACY COUNTY

South Texas Dev. Co.'s No. 1 Armendala, 1,500 ft. W of Arroya Colorado River, 1,200 ft. N of S line of Tract 4.
No report.

WILLIAMSON COUNTY

F. L. Brown's No. 1 Carl Seggren, 960 ft. W line, 240 ft. S line of 114.12-ac. tract in S. Woodruff Sur.
Drlg. 1,415 ft.
Fritz Fuchs' No. 1 Pflugger, 500 ft. S and E lines of Jacob Sapington Sur.
Standing 43 ft.
Johnson & Ray's No. 1-B M. Oxford Smith, 600 ft. S of No. 1-A in S. Williams Sur.
S.D. 20 ft.
Johnson & Ray's No. 1-A Mary Smith Oxford, 350 ft. S, 40 deg. E of No. 1, Williams Sur.
S.D. 1,140 ft.
J. Morgan Russell's No. 1 Nelson ,150 ft. S line, 1,115 ft. E line of John L. Justice Sur. No. 3.
S.D. 894 ft.

WILSON COUNTY

Ray Oil Co.'s No. 1 J. M. McDaniel, 1,700 ft. from SW line, 350 ft. from NW line of 193.5-ac. tract in Concepcion Bostello Sur. No. 9.
Rigged up and S.D.

ZAPATA COUNTY

Danvers & Harrison's No. 1 M. J. Vela, 686 ft. NE line and 300 ft. NW line, or 3,140 ft. E line and 330 ft. N line of Por. 29, Blk. 7, Bela Subd.
Drlg. 1,710 ft.

H. B. & W. Oil Co.'s No. 1 Cuellar, 150 ft. NE line, 450 ft. SE line of Blk. 3, Sur. 2, Papas Subd., Porcion 34.
No report.
Walter P. Luck's No. 1 A. Trevino, 175 ft. from S and E line of Blk. 41, Sur. No. 13.
Rigging up.
R. B. Morrison's No. 1 Vela, 1,320 ft. SW line, 660 ft. SE line of Blk. 5, Re-Plat of Jamison Subd., Por. 20.
No report.
Joe Palmer's No. 1 J. M. G. Martinez, 150 ft. SE and SW line, Blk. 37, Sur. 434.
Standing 700 ft.
A. H. Wray's No. 5 Gopher Trust, 330 ft. NE and NW lines of Blk. 12, Sur. 1, San Ignacia Subd., Borrego grant.
Abd. 2,007 ft.

ZAVLA COUNTY

Van Beavers et al's No. 1 Flowers, 1,600 ft. E line, 600 ft. N line of Sec. 19, I.&G.N. Ry. Sur., Blk. 1.
Rigging up; ready to spud.

Southwest Texas Proven

Week Ending January 19

NORTH CEDAR CREEK—BASTROP COUNTY

Joe E. Mills' No. 1 Mrs. W. J. Cardwell, 960 ft. from SE line, 1,260 ft. from SW line of tract, J. A. Navarro Sur.
Drlg. hard shale 1,730 ft.

CAESER—BEE COUNTY

Luling O. & G. Co.'s No. 5-B Ruhmann, 330 ft. from NE and NW lines of Blk. 29 of P. A. Butler Subd. of Wm. F. Hodges Sur.
Drlg. plugs 3,074-86 ft.
El Toro Co. of Houston's No. 1 Gardner, 370 ft. from S line, 920 ft. from E line of 105-ac. tract, F. Lewis Sur.
Derrick.

PETTUS—BEE COUNTY

Houston Oil Co.'s No. 5 Newman, 660 ft. N of No. 4.
Coring shale 3,740 ft.

TULETA—BEE COUNTY

Blanco Oil and Buchanan's No. 2-A Perez, 330 ft. from S and E lines of their 100-ac. "A" lease.
T.D. 2,925 ft.; cmtd. liner in sidetracked hole.
Heyser, Heard & Walton's No. 1 Walton, C of Blk. 1, Sur. 20.
Drlg. lugs 3,966 ft.
Edwin M. Jones' No. 2 Robinson, 330 ft. from S line, 990 ft. from E line of SW¼ of Sec. 5.
Location.
Edwin M. Jones' No. 2 Silcock, 990 ft. W line, 330 ft. N line of S½ of NE¼ Sec. 10.
Abd. 2,927 ft.
Edwin M. Jones' No. 4 Skinner & Harris, 1,650 ft. N line, 330 ft. E line of S½ of NW¼ of Sec. 10.
Drlg. 1,750 ft.
Edwin M. Jones' No. 5 Skinner & Harris, 330 ft. E line, 990 ft. S line of E½ NW¼ Sec. 10.
T.D. 3,926 ft.; I.P. 250 bbls. per day.
Edwin M. Jones' No. 6 Skinner & Harris.
Rigging up.
Houston Oil Co.'s No. 2 Ed Strauss, C Lot 6, Sec. 9, Hahl Subd., Uranga grant.
Coring shale 3,930 ft.
Mills Bennett's No. 2 Harris, 990 ft. from E line, 330 ft. from S line, S½ of NW¼ of Sec. 9, Uranga grant.
Location.
Mills Bennett's No. 2 Silcock, 330 ft. from S and E lines of 160-ac. tract.
Moving in material.
Mills Bennett's No. 1 Tuleta Mercantile Co., 330 ft. from N and W lines of SW¼ of Sec. 9.
T.D. 3,904 ft.; set 7-in. csg. at 3,899 ft.
Southwest Exploration Co.'s No. 1 Heyden & Bruckham, C of farm tract, 330 ft. from N and W lines of Sec. 20, Uranga grant.
Rigging up.

HOCH—BEXAR COUNTY

Jack Crouch's No. 3 Hoch, 1,500 ft. S line, 300 ft. E line of Baerera Sur. No. 58.
T.D. 750 ft.; I.P. 3 bbls. per day.
Jack Crouch's No. 5 Hoch, 330 ft. S of No. 4, Baerera Sur. No. 58.
Rigging up.
H. J. Trawalter's No. 7 fee, 150 ft. from N line, 450 ft. from E line of 202-ac. tract in S. Jett Sur. No. 53.
T.D. 660 ft.; I.P. 3 bbls. per day.

ALTA MESA—BROOKS COUNTY

Mrs. Florence East's No. 1 G. Madrigal, 300 ft. S line, 330 ft. E line of Share "B," R. G. Salinas grant.
No report.
Mrs. Florence East's No. 2 Madrigal, 2,970 ft. S line, 990 ft. W line of Share "B," R. G. Salinas grant.
Standing 120 ft.

DALE—CALDWELL COUNTY

McNell Pet. Co.'s No. 1 J. M. Miears, 660 ft. NW line, 700 ft. SW line of 327-ac. tract in W. C. Swearingen Sur.
W.O.C. 2,401 ft.

DUNLAP—CALDWELL COUNTY

Moseley's No. 1 J. M. Pierce, 150 ft. E. line, 400 ft. S line of G. C. and W. P. Walker tract, Seale Sur. No. 8.
Chalk 2,303 ft.; standing.

GOVERNMENT WELLS POOL—DUVAL COUNTY

Wayne Oil Co.'s No. 2 Curry, 330 ft. N and W lines of NE SW Sur. 62.
Abd. location.
Wayne Oil Co.'s No. 3 Runnels, 330 ft. S line, 910 ft. W line of NE NW¼ Sur. 62.
Abd. location.
Edgington & Murray's No. 1 C. W. Hahl, 330 ft. N and E lines, Blk. 16, Sur. 250.
Drlg. 1,613 ft.
Government Wells Oil Co.'s No. 10 Lundell (State), 660 ft. N of No. 8.
Rigging up.
Magnolia Pet. Co.'s No. 2 Duval County Ranch, 330 ft. from S line, 990 ft. from E line of Sur. No. 57.
Derrick.
Magnolia Pet. Co.'s No. 4 Hahl-Burch, 330 ft. S line, 990 ft. E line of SW¼ Sur. 43.
Abd. 3,250 ft.
Magnolia Pet. Co.'s No. 12 Hahl-Sutherland, 330 ft. from S line, 990 ft. from W line of NW¼ of Sur. 61.
Drilling.
Magnolia Pet. Co.'s No. 4 Ruiz, 1,141 ft. from SW line, 330 ft. from NW line of Sur. 127.
Moving in material.
Magnolia Pet. Co.'s No. 3 D. Ruiz, 672 ft. W line, 736 ft. NW line, Sur. 127.
Location.
Magnolia Pet. Co.'s No. 1 Miguel Ruiz, 330 ft. from S and E lines of NW 200-ac. of S.A.&M.G. Ry. Sur. No. 1.
Rigging up.
Magnolia Pet. Co.'s No. 6 M. Ruiz, 330 ft. SE line, 743 ft. SW line, Sur. 574.
T.D. 2,461 ft.; I.P. 75 bbls. per day.
Russ Pet. Co.'s No. 6-C D.C.R.C., 330 ft. S and W lines of W½ NE¼ of Sur. 62.
Drlg. 2,103 ft.
Salt Dome Oil Co.'s No. 1 Moody, 330 ft. from N line, 1,370 ft. from W line of Sur. No. 60.
No report.
Smith & Story's No. 12 Lundell, 330 ft. S line, 990 ft. W line of Sur. 48.
Coring 2,260 ft.
E. R. Thomas' No. 1 Bishop Cattle Co., 2,325 ft. E line, 330 ft. N line of S½ of Sur. 135.
Drlg. 203 ft.

HOFFMAN—DUVAL COUNTY

Southwest Drlg. Co.'s No. 1 Cuellar, 330 ft. SW and NW line of NE¼ of Sur. 114.
Drlg. 2,578 ft.

LUCAS—LIVE OAK COUNTY

Houston Oil Co.'s No. 30 Cartwright, 1,030 ft. N of No. 26.
Drlg. hard sand 2,740 ft.
Lion Oil Ref. Co.'s No. 3 McNeil, 660 ft. N, 660 ft. E of No. 1.
Location.

SAM FORDYCE—HIDALGO COUNTY

Alamo Drlg. Co.'s No. 1 Guerra, NW 12.5 acres of S 75 acres of Tract 254, Por. 40.
T.D. 2,760 ft.; I.P. 5 bbls. per hr.
Davis & Harrison's No. 1 Smith, NW 5-ac. tract, Tract B-3, Por. 41, S offset to No. 1 Guerra, of D. & H.
Abd. 2,750 ft.
Davis & Harrison's No. 1-A C. E. Smith, Tract B-3, NW 5 acres, 300 ft. from N line, 165 ft. from W line, Por. 41.
Drlg. 1,905 ft.
Heep Oil Co.'s No. 3 Seabury, SE 26-ac. of Tract 256, Por. 38.
T.D. 2,785 ft.; I.P. 11 bbls. per hr.; ⅛-in. choke.
Henshaw Oil Corp.'s No. 1 Seabury et al, C of SW 11.5 acres of NE 45.25 acres, Tract 256, Por. 38.
Location.
T. I. Larson's No. 1 G. G. Salinas, 330 ft. S and W lines of Share 10, Por. 41.
Abd. 3,000 ft.
Moncrief & Showers' No. 1 C. E. Smith, 330 ft. from N line, 323 ft. from E line of Tract 3-B, Por. 41.
W.O.C. 2,762 ft.
Moss & Bass et al's No. 1 F. B. Guerra, 282 ft. N line, 283 ft. W line of W 25 acres of S 50 acres of E 290 acres, Tract 254, Por. 40.
Location.
Navarro Oil Co.'s No. 1 Flores, Tract 275, Por. 40. 3,000 ft. SE of discovery well.
T.D. 2,760 ft.; I.P. 13 bbls. per hr.; ¼-in. choke; tubing pressure 240 lbs.
Navarro Oil Co.'s No. 2 Seabury, 330 ft. S and W lines of N 25-ac. of SE 51-ac., Tract 256, Por. 38.
Sand 2,756-64 ft.; drilled plugs and is C.O.
J. M. Newman et al's No. 2 Flores, 190 ft. S line, 240 ft. W line of 10-ac., Tract 275, Porcion 40.
Cmtd. surface csg. 200 ft.
Reynosa Oil Co.'s No. 1 F. B. Guerra, 330 ft. from N and W lines of NW 20 acres of SE 40 acres of Tract 256, Por. 39.
Set surface csg. 260 ft.
Reserve Oil Co.'s No. 1 Seabury, 330 ft. N and E lines of 28-ac. tract, Tract 256, Porcion 38.
Cmtd. surface csg. 200 ft.
Reserve Oil Co.'s No. 2 Seabury, 330 ft. S and E lines of 28-ac. tract, Tract 256, Porcion 38.
Location.
Rogers O. & G. Co.'s No. 1 Guerra, 600 ft. W offset to No. 1 Guerra, Tract 254, Porcion 40.
Recmtd.; W.O.C. 2,761 ft.
Weekly Oil Co.'s No. 2 Smith, 620 ft. N line, 164 ft. E line of NE 34.43-ac. in Tract 278, Por. 40.
W.O.C. 2,752 ft.
Windsor Oil Co.'s No. 1 Doss, 330 ft. N line, 315 ft. E line of 55-ac. tract, Tract 278, Porcion 40.
Drlg. 2,320 ft.
Otto Woods' (Kingwood) No. 4 F. B. Guerra, 330 ft. S and E lines of NW 30 acres of S 150 acres. Tract 254, Por. 39.
Moving in derrick.
Otto Woods' No. 4 John Lawrence, 330 ft. from E line, 350 ft. from S line of W 40 acres, Tract 274, Por. 39.
Rigging up.
Otto Woods' (Kingwood) No. 5 John Lawrence, 165 ft. W line, 335 ft. N line of Tract 274, Por. 39.
Moving on.

SANDIA—JIM WELLS COUNTY

O. W. Killam's No. 4 Wade, ¼ mile N of No. 3 Wade.
Drlg. 2,100 ft.
Sinclair Prairie's No. 1-A Seeligson, 630 ft. from N line, 330 ft. from E line of B.S. &F. Sur.
D.D. 2,405 ft.
Walsh & Long's No. 1 Allen, 200 ft. W line, 170 ft. N line of 100-ac. lease.
Abd. 2,982 ft.

SEELIGSON—JIM WELLS COUNTY

Magnolia Pet. Co.'s No. 5 Seeligson, 1,320 ft. N, 660 ft. E of No. 2 well on Farm 1, Blk. 4 of Canalas Sur.
No report.

JACOB POOL—McMULLEN COUNTY

Loma Oil Co.'s No. 23-A Jacob, 660 ft. S of No. 32-A, 150 ft. E line of tract.
Abd. 995 ft.
Motes & Bettingfield's No. 3 Lark, 660 ft. S of No. 1 and 330 ft. W line of lease.
Drlg. 850 ft.
L. D. Ormsby's No. 1 Jacob Corp., Sur. 16.
Coring for sand 891 ft.
Stewart, Smith & Story's No. 2 Jacob.
Moving in material.

SINTON—SAN PATRICIO COUNTY

Heep Oil Corp.'s No. 2 R. Welder, 466 ft. from S line, 2,000 ft. from Eline of Adeline Welder tract in Victor Loupsey Sur.
Spudded.
Heep Oil Co.'s No. 2 Welder, Welder homesite.
Rigging up.
Humble O. & R. Co.'s No. 1 Welder, 2,460 ft. from N and E lines of 300-ac. lease.
Rigging up.
Plymouth Oil Co.'s No. 2-B Welder, start at SW cor. of "B" lease, thence NW along the W line 2,100 ft., thence 330 ft. NE at R/A.
Drlg. 5,700 ft.

LOS OLMOS—STARR COUNTY

H. L. Curry's No. 1 Bass, 835 ft. E line, 2,522 ft. N line of Sur. 8, Por. 75-76-77.
Location.
J. P. Kennedy's No. 3 Kelsey-Bass, 300 ft. SE of No. 7 Kelsey-Bass in Blk. 7 of Porcions 75, 76 and 77.
Standing 710 ft.

RIO GRANDE CITY—STARR COUNTY

Goodwin & Zimmerman's No. 1 Ida Davis, 33 ft. SW line, 576 ft. NW line of Blk. 16, Tract 4, Share 78, Por. 81.
Abd. 1,460 ft.

AGUA DULCE—NUECES COUNTY

United Prod. Co.'s No. 1 M. F. Rivera, 330 ft. at R/A N line, 330 ft. R/A E line of Rivers 168.82 acres, Palo Alto Matias Garcia Grant.
T.D. 4,780 ft.; ¼-in. choke; 700 lbs. tubing pressure; 740 lbs. csg. pressure.

BARBACOAS—STARR COUNTY

Merren, Johnson & Jeffries' No. 3 S.C.C.C., 330 ft. from S and E lines of Blk. 37, Subd. of Porcion 89.
Coring 2,508 ft.

SAXET—NUECES COUNTY

Southern Mineral Corp.'s No. 4 Ocher, 1,320 ft. S line and 417 ft. E line of Ocher 202.52-ac. tract in Sec. 8.
Derrick.

WEST COLE POOL—WEBB COUNTY

American Liberty Oil Co.'s No. 8-A Bruni, 883 ft. NW line, 777 ft. SW line of Sur. 6, M. Arispe grant.
Location.
Herman Brown's No. 5 Bruni, 418 ft. from NE line, 260 ft. from SE line of Blk. 1, Sur. 5.
Rigging up.
Cole Pet. Co.'s No. 19 Mrs. Benavides, 330 ft. SE line, 1,490 ft. SW line of 300-ac. tract in Callaghan Homestead Tracts.
Location.
Cole Pet. Co.'s No. 19 B. Benavides, 330 ft. NE line and SE line of 300-ac. tract.
Location.
Cole Pet. Co.'s No. 89 Benavides, 1,490 ft. SW line, 330 ft. NE line of Sur. 1.
Drlg. 1,603 ft.
Foster Barnsley's No. 6 Webster, 150 ft. E line, 510 ft. S line of NE SW Sur. No. 484.
Drlg. plugs 3,053 ft.
O. W. Killam's No. 1 Bruni, 200 ft. N and W lines of Blk. 55.
Drlg. 2,310 ft.
O. W. Killam's No. 30 Bruni Est., 330 ft. SE line, 1,427 ft. SW line of Sur. 6, M. Arispe grant.
T.D. 3,413 ft.; recmtd. csg. at 2,900 ft. to complete as gasser.
O. W. Killam's No. 31 Bruni, 2,187 ft. SW line, 150 ft. SE line of Sur. 6.
Location.
Magnolia Pet. Co.'s No. 6 Brennen-Benavides, 32 ft. SW line, 330 ft. SE line of Blk. 485, M. E. Hale Subd., Arispe grant.
Drlg. 1,013 ft.
Highland Oil Co.'s (Pure) No. 1 Bruni, 330 ft. NW and NE lines of tract in Sur. 7.
Location.
Sun Oil Co.'s No. 3 Bruni, 260 ft. SE line, 418 ft. NE line of Sur. 5.
T.D. 3,436 ft.; rigging up to pump.
Sun Oil Co.'s No. 4 Bruni, 418 ft. NE line, 260 ft. SE line of Blk. 19, Sec. 5.
Location.
Sun Oil Co.'s No. 8 Bruni, 418 ft. from NE line, 200 ft. from SE line of Blk. 5, Sur. 5.
Skidding derrick.

BYERSVILLE—WILLIAMSON COUNTY

R. R. Ogden's No. 1 Matteck, 150 ft. N and W lines of 108.5-ac. tract in White Sur.
Location.
Ogden & Reed's No. 1 (2) C. G. Zieschang, 3,500 ft. SE line, 150 ft. SW line of 200-ac. tract in H. White Sur.
T.D. 890 ft.; S.D.

BLAS URIBE—ZAPATA COUNTY

O. W. Killam's No. 9 Bruni, 180 ft. SE line, 400 ft. NE line of Blk. 9, Blas Uribe tract, Borrego grant.
Drlg. 1,720 ft.

LOPENO—ZAPATA COUNTY

Norden & Morris' No. 1 Ramirez, 570 ft. SW line and NW line of Blk. 7, Share 20, Por. 19.
Showing gas; completing at 2,040 ft.

MARTINEZ—ZAPATA COUNTY

Sulgrave Oil Co.'s (Sun) No. 1 M. B. Gutierrez, 3,960 ft. W line, 660 ft. S line of Sur. 182.
W.O.C. 1,687 ft.
S.R.C. Oil Corp.'s No. 4-H Cuellar, 175 ft. from N and W lines of Blk. 8, Sur. 13.
Rigging up.

MIRANDO VALLEY—ZAPATA COUNTY

Cliff Durks' No. 1 R. Hinnant, 200 ft. W line, 150 ft. S line of Blk. 16, Sur. 116.
Derrick.

Deterioration of Absorption Oil in Service Traced in Two Year Survey

By W. E. KUHN and J. F. COLLINS, Jr.
Texas Co.*

During recent years, the petroleum industry has become vitally interested in, and consequently thoroughly familiar with, the advances being made in the design and operation of gas collection and recovery plants. The growth of the natural gasoline industry and the modern trend toward greater conservation of all petroleum vapors have been responsible for a major portion of these advances. A contributing factor to this advancement has been the improvements in practical methods of analyzing the gases and oils that are used in such equipment. With the perfection of the Podbielniak apparatus and kindred methods of dividing gases and light naphthas into their respective hydrocarbons, the problem of design and operation has been placed on a better technical foundation. It is surprising, however, that while great progress has been made along these lines, very little thought or consideration has been given the absorption media used in this type of process. A search of the literature reveals innumerable articles on equipment, operation and design of such plants but very meager information on the most desirable absorbing medium or methods of testing this medium. Particularly conspicuous by its absence is any useful information on the rate of deterioration of absorption oils or means of determining this rate.

A satisfactory test, or tests, to determine the time for renewal of an absorption oil in a batch system or to determine the rate at which new oils, as make up, should be added to maintain a definite quality of absorption medium, would contribute to more efficient and economical operation.

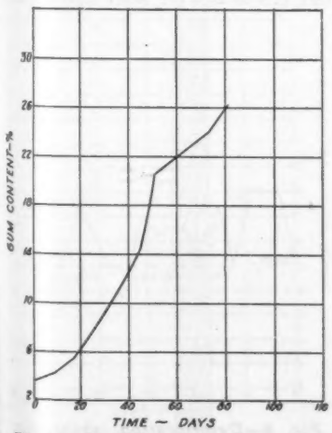


Fig. 1—Deterioration, absorption oil gum content

In view of the lack of this type of information, a study was instigated in an effort to obtain a definite means of determining the period of usefulness of an absorption oil in place of an arbitrary period of use based on general practice. The term, "period of usefulness" would then refer to that interval before excessive formations of gums, etc., have occurred within the oil causing the lowering of absorbing efficiency and introducing undesirable operating difficulties such as fouling of heat exchanger equipment, etc.

*Presented before the Petroleum Division of the American Chemical Society at the eighty-eighth meeting at Cleveland, Ohio. Published with the permission of the American Chemical Society.

Previous Studies

Prior to the beginning of such an investigation, it was necessary to determine a series of physical and/or chemical tests whereby the changes which occurred within the absorption oil while in service could be detected and determined. Again the literature was investigated with very meager results. The work of Kallam[1] was the most complete publication found and covers tests on new absorption oils and on used absorption oil chiefly with the viewpoint of purchases. This author presents graphic results of gravity, boiling range, molecular weight, viscosity, vapor pressure and demulsibility tests made on both used and new oils. Very little information is given in the above article in regard to the time element, as it deals largely with a comparison of the various characteristics of a new oil and an oil after use.

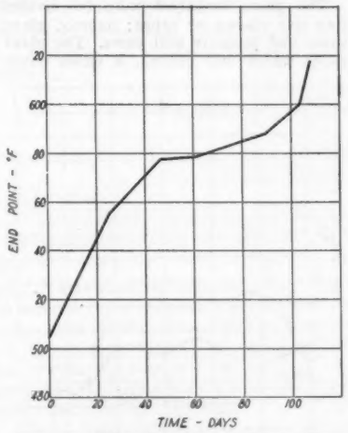


Fig. 2—Deterioration, absorption oil endpoint

Beall[2-3-4], in a series of articles which deal largely with the design and operation of absorption equipment, chiefly for natural gas, bases his recommendations largely on vapor pressure and actual absorption tests.

Kallam and Coulthurst[5] developed a method for the determination of the molecular weight of absorption oils. Their method, however, would not be practical for routine or plant control tests due to the extremely accurate laboratory equipment and the highly trained personnel required to conduct the test.

Gard[6] lists the detrimental effects of "dirty oil" on absorption plant operation and describes a plant for the cleaning of the "dirty oil."

Boyd and Jones[7] describe a new method for determining the vapor pressure of lean oils at any desired temperature. The authors claim that by means of this apparatus a method has been developed which is thought to eliminate the effect of the presence of air and water dissolved in the oil.

Selection of Tests

No definite information having been obtained from the literature, it was necessary to outline a series of tests based on such data and suggestions as were available in the literature and the experiences of the personnel connected with gas plant and gas testing work. A brief description of the tests finally adopted follows:

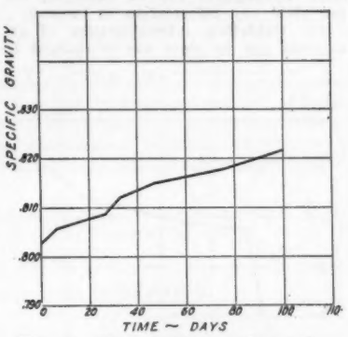


Fig. 3—Deterioration, absorption oil specify gravity

1. Gravity—A.P.I. Gravity or Specific Gravity.—The gravity can be made to serve as a barometer for the absorption oil since any increase in the heavier components of the absorption medium due to oxidation or contamination would be readily shown by the decrease in gravity. Also the molecular weight and possibly the vapor pressure might be checked approximately by means of the gravity. Both A.P.I. and specific gravity were used in order that one might serve as a check against the other.

2. Distillation—A.S.T.M.—The distillation test is obviously one of the easiest and simplest to make and is indicative of the quality of the oil. The initial boiling point and lower distillation range are of little significance in respect to the quality of the oil other than to act as an index of proper plant operation. The lower initial boiling point clearly shows the relative percentage of light fractions left in the used oil through improper stripping. On the other hand, the endpoint should roughly indicate the amount of gums and resins present in the oil. Thus by obtaining periodic distillations and plotting on graphical charts, the operation of the absorption system may be closely observed both as to improper stripping of the rich oils and formation of large quantities of gum. Any addition of make-up oil or changes in gas plant or stripper operation is usually revealed by the distillation.

3. Laboratory Evaluations.—Samples of the absorption oil were fractionated into a gasoline fraction and an absorption fraction on a batch 5-gallon still equipped with a fractionating tower.

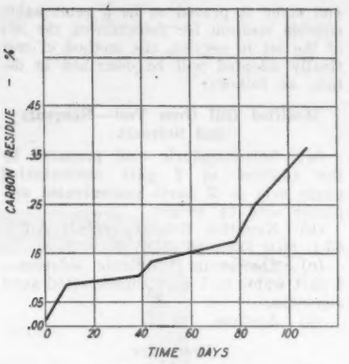


Fig. 4—Deterioration, absorption oil carbon residue

Still further samples were reduced to 40 per cent bottoms in order to concentrate the objectionable constituents of the oil and thus magnify the results. This latter procedure, however, did not produce results of any greater interest.

4. Demulsibility.—The importance of the demulsibility test in determining the "life" of an absorption oil can hardly be overestimated. This test not only shows the tendency of the absorbent to emulsify with the condensed steam or leaking condenser water thus causing operating difficulties, but also serves as a reliable indicator for the formation of the gummy, resinous bodies which occur within the absorption oil while in service.

Several methods of determining the demulsibility were tried without the desired success. A modified test proposed by Kallam[1] proved to give the most consistent and reliable results. This test was used throughout the investigation and, while it was frequently necessary to obtain check tests, it is believed that the results achieved are far more reliable than could have been secured with any of the other methods tried. Violet stirring or high temperatures were the prohibiting factors in other tests, particularly in the case of rich oils. Briefly, this method requires that equal volumes of distilled water and oil be thoroughly agitated for a period of three minutes. The time in minutes for complete separation is then recorded.

5. Viscosity A.S.T.M. — Viscosities were obtained at 60° F. with the conventional Saybolt Thermo Viscosimeter. The oils, after a few days' service, became so discolored, however, that the test on the thermo viscosimeter was impractical and therefore this test was not used except for unused lean oils.

6. Tar Content.—Various methods of testing for tar content were tried with little success. The test was, therefore, abandoned.

7. Gum Content. — There is little doubt but that the gum content of an absorption oil is the most important single property which will effect demulsibility, result in gum deposition in the equipment and contribute to carbonization, with the resultant mechanical difficulties experienced when circulating oils with high gum content. Oils containing large quantities of gum tend to form emulsion of varying degrees and there is always the tendency for gummy materials to settle out on heated surfaces of heat exchangers and in storage tanks. This fact is evidenced by the necessity for frequent cleaning of exchanger tubes at the absorption and stripping oil units and by the heavy deposits found in the oil storage tank during the periods when the gum test runs high.

Several methods for the determination of gum content were tried with varying degrees of consistency. This method as proposed by Gill[8] proved to be very satisfactory and the most reliable of all tests investigated. This test as a measure of the gum or the resinified constituents of the oil, as brought out in the latter discussion, apparently correlated with actual plant results satisfactorily.

As this test required considerable modification from the original Gill method

and since it proved to be a remarkably reliable medium for determining the life of the oil in service, the method of test finally adopted will be described in detail, as follows:

Modified Gill Gum Test—Reagents and Solvents

(a) Nitrosulphuric acid prepared by the addition of 1 part concentrated nitric acid to 2 parts concentrated sulphuric acid by weight.

(b) Naphtha, Belgian asphalt A.P.I. 85.1, 86.6 Dist. 86°-158° F.

(c) Ammonium hydroxide solution—1 part water to 1 part concentrated aqua ammonia.

(d) Acetone.

Procedure

Weigh approximately 5 grams of oil accurately to the third place in a 150 ml. beaker. Add 11 ± 0.1 grams of nitrosulphuric acid and mix thoroughly with

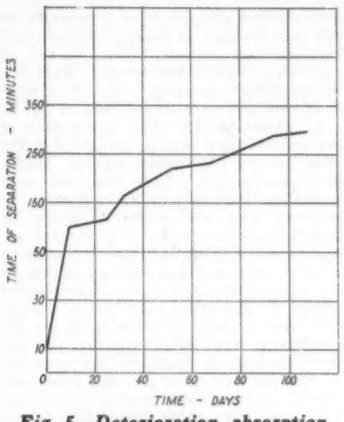


Fig. 5—Deterioration, absorption oil demulsibility

the oil by stirring for about 10 minutes. Cool the mixture and place in a bath where the temperature of the mixture is maintained at 10-15° C. for exactly two hours.

At the end of the two hours, remove the mixture from the bath and mix thoroughly approximately 30 ml. of naphtha with the acid-oil mixture. Carefully decant the naphtha layer. Repeat this mixing and decanting of the naphtha layer five times in all, or until no apparent trace of oil can be noted in the decanted naphtha.

Neutralize the acid by adding ammonium hydroxide solution drop by drop. (Note: When adding the ammonia, caution must be used to prevent violent reaction between the ammonia and acid.) The endpoint may be distinguished by the color of the solution turning dark brown. Add an excess of one dropping pipette full of ammonia, cool the mixture to room temperature and filter with suction through a Gooch crucible leaving the lump of gummy matter in the 150 ml. beaker. Wash the gum thoroughly with water letting the washings pass through the Gooch crucible. Continue the washings until apparently all the ammonia salts are removed. Finally wash with naphtha to remove last traces of oil.

After the gum is thoroughly washed with water and naphtha, dissolve the gum in the beaker and in the Gooch crucible with acetone and catch the acetone washings in a previously weighed, dry Erlenmeyer flask. Continue washings with acetone until all traces of gum are dissolved. Evaporate off the acetone on a steam bath and then dry the gum in an oven at 210° F. for one hour. Cool the Erlenmeyer flask in a desiccator, reweigh and determine the percentage gum.

Calculations

$$\text{Per cent Gum} = 100 \times \frac{\text{Increase in weight of Erlenmeyer Flask}}{\text{Sample}}$$

8. Carbon Residue — A.S.T.M.—Conradson. — The A.S.T.M.-Conradson method was used and gave satisfactory results although it was not as indicative as some of the other tests.

9. Sulphur. — The bomb sulphur determination was obtained on all samples. This test will naturally be of little importance to plants which are processing clean, sweet gases and is of little value in this study.

10. Corrosion. — While the corrosion test might prove of value from the standpoint of life of equipment, the actual effects on absorption are of a very minor nature. Several methods of test were investigated but as expected, did not yield any information of interest.

11. Oxidation. — Deterioration of absorption oils in plant use is thought to

TABLE 1—ABSORPTION OIL DETERIORATION

Oil in service—days.	New oil	Used oil 17	Used oil 32	Used oil 51	Used oil 71	Used oil 89	Spent oil 108
Tests—							
Gravity—Spec.	0.8022	0.8081	0.8118	0.8146	0.8170	0.8189	0.8240
Carbon res., % ...	0.01	0.07	0.09	0.09	0.16	0.25	0.42
Sulphur (bomb), %	0.18	0.28	0.42	0.43	0.45	0.47	0.53
Demulsibility, min.	9	107	165	181	232	256	290
Gum, % (Gill) ...	2.76	6.63	9.40	10.6	13.5	16.7	20.8
Distillation—							
I.B.P.	344	290	238	378	376	360	324
10	386	334	387	420	430	426	440
20	400	360	413	428	440	446	452
30	411	409	426	436	446	450	458
40	420	422	432	444	450	454	462
50	428	433	438	448	456	460	468
60	436	442	447	454	462	466	471
70	444	451	456	464	470	470	481
80	452	462	468	474	480	484	494
90	468	485	484	490	501	500	518
95	483	516	523	516	536	534	556
E.P.	505	524	556	578	580	588	619
Recovery, %	98.0	98.0	98.0	98.0	98.0	98.0	98.0

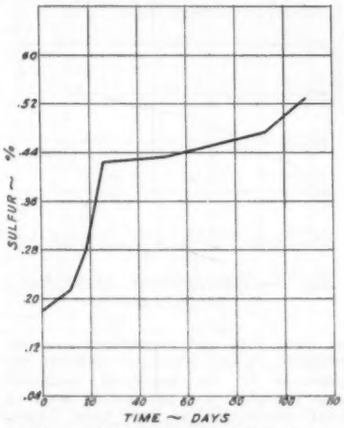


Fig. 6—Deterioration, absorption oil sulphur content

be due chiefly to oxidation and to a lesser extent to possible cracking where both fire and steam are used for stripping the rich oil. As a direct result of oxidation, gums and resins are formed, the boiling range is lengthened and the color darkened. While the effect of oxidation is indicated by the gum, carbon residue and like tests, it was felt advisable to develop, if possible, some means of actually determining the oxidation taking place within the oils. Several methods of tests were tried, as follows:

Sligh Oxidation Test for Mineral Oils, A.S.T.M. Committee D-2.

B.E.S.A. Sludge Test No. 148, 1927.

German Tar Test, Report of International Electro-Technical Commission Advisory Committee No. 10, November, 1927.

None of these tests proved satisfactory on either new or used oils and it was necessary to proceed with the investigation without them. There is no question but that a proper method of determining the oxidation of such oils would prove to be very beneficial.

12. B.S.&W. — A.S.T.M. Method No. D96-30.—Very little information of any value was obtained from the B.s. and w. test. In fact, the test varied so little that no difference could be detected between the new and used oils. For this reason, the test was eliminated after sufficient samples had proven it to be of little interest.

After carefully checking over the series of tests and the results obtained, it was decided to use only those tests which yielded accurate and consistent results. These tests were:

Gravity.
Distillation.
Demulsibility.
Gum content.
Carbon residue.

Description of Equipment

Before entering into the discussion of the several surveys which were made using the above listed tests, brief mention should be made of the type absorption oil, gases, and equipment on which the investigation was made.

The entire investigation was made on commercial equipment employing a kerosene distillate as the absorbing medium. Average tests on this stock are as follows:

Gravity, °A.P.I.	43
Initial boiling point range, °F.	345
Boiling range, °F.	165
Per cent over at 460° F.	25
Per cent over below 475° F.	95
Gum content by weight (Gill), per cent	5

The gases employed may be divided into two classes or types; namely, plant gases and pressure still gases. The plant gases which will contain a small quan-

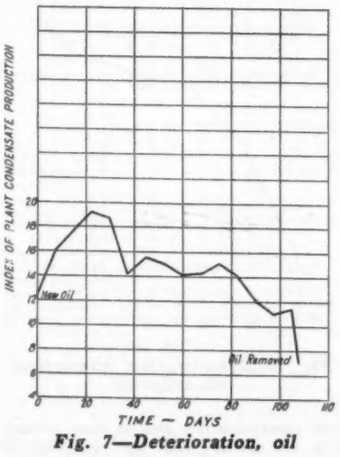


Fig. 7—Deterioration, oil

tity of air were made up of the vapors collected under vacuum from crude stilling units, rerun stills, steam stills, storage tanks, and the general run of refinery gases. These gases comprised approximately 40 per cent of the total gases collected and averaged approximately 5 gallons of butanes and heavier per 1,000 cubic feet. Pressure still gases were made up entirely of accumulator drum gas collected from cracking units. The accumulator drums were operated at approximately 125 pounds per square inch gauge pressure and the gases averaged about 1.5 gallons per 1,000 cubic feet. Each of the two types were handled in separate absorption systems, the rich absorption oils from each system being combined before charging to stripping unit. The plant gases entering through a common manifold, passed into the water scrubber where possible entrained materials such as coke, oil, etc., were removed and thence through a Koppers system for desulphurization. After leaving the Koppers system, the gases were compressed, cooled, and after removing the condensate, passed to the base of one of these absorbers. The absorption oil enters the top of the absorber and flows counter-current to the gases.

The pressure still gas absorption system consists of two absorbers in parallel. The gases enter the absorbers under their own pressure without previous treatment. The lean oil enters the top of each absorber and flows counter-current to the upward flow of gas. The stripped gases from both systems are combined into the plant fuel main.

After leaving the absorption system, the combined enriched oils pass to a stripping unit where the absorbed fractions are removed from the rich oil. This unit consists of two fractionating towers in parallel. The charge, after preheating in exchanger equipment, enters the tower about two-thirds of the way to the top and is stripped as a result of the use of steam and the recycling of the lean oil bottoms through a fired tube still unit.

Results of Investigation

With the satisfactory system of tests having been outlined, a series of five surveys were made. These surveys covered a period of two years' operation and represent the normal conditions for the period in which they were made. For the purpose of simplicity and since all of the five tests were readily comparable, only an average survey is included in this paper. Samples of the lean and rich oils were obtained at regular weekly intervals and subjected to the tests previously listed.

It was necessary to make the tests on samples of absorption oil which were obtained from the combined system described previously. It would have been desirable to investigate the deterioration of absorption oils used in the two systems separately if it had been possible in view of the small air content encountered in the plant gas system which is probably a contributing factor to the rate of deterioration. Every effort was made to secure accurate sampling and uniformity of testing. An examination of Table 1 which lists the results of the tests on the oils at various intervals as well as the new and spent oils, will forcibly illustrate the changes which occurred within the oil while in service.

Summarizing the data contained in this table, it will be noticed that there is a rapid increase in the endpoint by distillation (505 to 619° F.), demulsibility (9 to 290 minutes), and gum content (2.8 to 20.8 per cent) together with

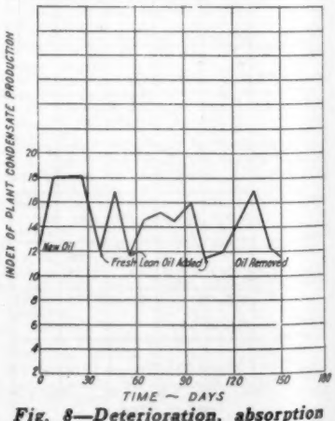


Fig. 8—Deterioration, absorption oil

an increase to a lesser extent in the sulphur (0.18 to 0.53 per cent) and carbon residue (0.01 to 0.42 per cent).

Figure 1, in which the increase in gum content is shown graphically, presents the most outstanding illustration of the deterioration of the absorbing medium. This test was found to be the most reliable and accurate means of determining the "age" of the absorption stock. Unusual conditions at the absorption or stripping systems were almost instantly revealed by the variations of the gum test. High gum contents resulted directly in difficulties for the stripper due to heavy deposits in exchangers, etc., with the resulting improper cooling of the stripped oils. It

Announcement

SINCE there has been some misunderstanding regarding the conditions of sale and use of Wire Rope in the Oil and Gas Fields, it appears advisable to call the attention of the Drilling Industry to the following extract from the Wire Rope Manufacturers' Supplementary Code of Fair Competition. (Registry No. 1151-03.)

☆

EXTRACTS FROM CODE OF FAIR COMPETITION OF THE WIRE ROPE AND STRAND MANUFACTURING INDUSTRY A DIVISION OF THE FABRICATED METAL PRODUCTS MANUFACTURING AND METAL FINISHING AND METAL COATING INDUSTRY

ARTICLE VIII
UNFAIR TRADE PRACTICES

"In addition to the unfair practices established in Article V of the Basic Code, except Section A thereof, which are made a part hereof the same as though repeated and set forth at length, and for all purposes of this Supplementary Code, the following described acts shall constitute unfair practices. Any Member of the Industry who shall directly or indirectly, through an officer, employee, agent or representative, use or employ any of such unfair practices shall be guilty of a violation of this Supplementary Code:

8. Making an adjustment on oil country wire rope other than in accordance with A. P. I. Standard 9-A of July, 1931, Section VIII, of "Inspection and Rejection of Wire Rope" or any revision thereof.

A. P. I. STDS. No. 9-A
"A. P. I. SPECIFICATIONS FOR WIRE ROPE"

SECTION VIII
INSPECTION AND REJECTION

24. Inspection

24-a. "Manufacturer will, on request of purchaser, conduct tests as called for in this specification on reasonable notice from the purchaser, during which tests the manufacturer will afford opportunity to the purchaser's representative to be present.

24-b. "A manufacturer delivering wire rope bearing the A. P. I. monogram and grade designation warrants that such material complies with these specifications. No rejections under these or any other specifications are to be wound on reels bearing the A. P. I. monogram, or sold as A. P. I. wire rope. When wire rope wound on reels bearing the A. P. I. monogram is rejected, it shall be removed from said reel, or the A. P. I. monogram on said reel shall be canceled by the painting or stenciling of two horizontal and two vertical lines through the body of the monogram, substantially as follows:

24-c. "It is recommended that whenever possible the purchaser upon receipt shall test all new rope purchased in accordance with these specifications. It is realized after a rope is put in use and it fails to render satisfactory service, that it is impractical to retest such used rope. It is therefore required that the purchaser shall preserve at least one test specimen of all new rope purchased, length of specimen to be at least ten (10) feet, properly identified by reel number, etc. Care must be taken that no damage will result by storage of specimen.

24-d. "If a purchaser receiving rope purchased on these specifications does not make physical test before putting rope into use, or does not preserve in the proper manner the sample as outlined, recourse on the manufacturer shall be considered waived."

☆

SUPPLEMENTARY CODE AUTHORITY OF THE WIRE ROPE AND STRAND MANUFACTURING INDUSTRY

is obvious that the gum content will also contribute to a material reduction in actual gas plant efficiency in respect to maximum absorption and subsequent recovery of gasoline fractions. Were it possible to eliminate gum formation there is every reason to believe that absorption stocks might be used for indefinite periods before it would be necessary to replace them with new oils. In each survey after the gum content of the oil had reached 18-20 per cent, the stripper experienced heavy deposits of gummy, resinous bodies in the heater, exchangers and storage tanks. That this deposit was largely a gummy, tarry material was shown by the fact that the deposits were for the most part, benzol soluble. Table 2 contains an analysis that was made of a representative sample of this deposit.

TABLE 2—ABSORPTION OIL DETERIORATION—DEPOSIT FROM USED ABSORPTION OIL.

Chemical Analysis

	Per cent— Tanks	Coolers
Moisture and volatile matter (at 250° F.)	95.00	16.7
Oil	1.95	12.6
Tar	0.33	....
Carbon	1.22	....
Ash	1.49	70.7

In Figure 2 is shown the increase that was made in the endpoint by distillation. Since the substances which are absorbed by the oil all have much lower endpoints than that of the original absorbing medium there is little doubt but that the rapid increase in endpoint is caused by the formation of the heavy, gummy constituents within the oil. The increase in specific gravity and carbon residue, Figures 3 and 4, respectively, may likewise be directly credited to this gum formation.

The results of the demulsibility test is shown by Figure 5. The very rapid tendency of a used oil to emulsify with use is strikingly shown. There is very little doubt but that resinous bodies within the oil aid in building up and maintaining these emulsions.

The sulphur content, Figure 6, is included only for general interest since this factor will be directly governed by the type of gases handled and the process used.

The effects of deterioration of the oil, from the efficiency of absorption viewpoint, is best shown by Figure 7. This curve is the result of actual check made on plant condensate production during the period of the test and illustrated the losses which might be expected through the use of a rapidly deteriorating absorption oil.

The time of service of the oil is plotted against an index of plant condensate production which is an empirical factor based on quantities handled and richness of the gases entering the absorption system. In other words the index is a measure of the efficiency of the plant.

It will be noted that there is a general reduction in condensate production which parallels the increase in gum content indicating a lowering of efficiency of the system. It was noted that after the addition of new oil an increase is shown over that observed initially with the new oil. This fact was noted in each of the five surveys and no explanation is offered. Figure 8 illustrates results of another survey in which additional new lean oil was added to the system as make-up oil. It will be noted that an increase in efficiency resulted immediately on the addition of the oil. The gum tests paralleled this curve showing a lowering of the gum on the addition of new oil.

Conclusions and Recommendations

Based on the results of this investigation, it is apparent that a series of physical and chemical tests have been developed whereby the period of usefulness of an absorption oil may be determined and that these tests are of such a nature as to be rapidly and accurately conducted by laboratory personnel of average ability. Most important of these tests are the gum, endpoint by distillation and demulsibility. Other tests, such as viscosity, tar and oxidation, failed to satisfactorily correlate plant operations. On the other hand, there is little doubt but that the tar and oxidation tests might be made of value and it is believed that with further investigation such tests could be developed. It is obvious from this work that the gum test and demulsibility test should be made a part of the specifications for a new oil to be used in an absorption system in order to be assured of the most profitable operation.

It will, of course, be necessary for the individual operator to establish his own limits and control tests for the length of service of an absorption oil for most efficient operation. These limits will depend on the type of system employed in each case. In the event of a complete batch renewal system employing a kerosene distillate of paraffinic origin, the following tests are suggested as limits:

Gravity, specific	0.825
Endpoint by distillation, °F.	600–620
Demulsibility, minutes (Kallam)	200–250
Gum, % (Gill)	15

In a system wherein either new oil, as make-up oil, is added and an equal portion of the used oil withdrawn or a small cleaning unit is in use to distill, clean and return a portion of the used oil to the system, a different set of limits will be required. In this case approximately the following control is suggested:

Gravity, specific	0.815
Endpoint by distillation	560–580
Demulsibility, minutes (Kallam)	200–250
Gum, % (Gill)	8–10

It is believed that the information herein reported should be of considerable value to operators of gas recovery and distillation units permitting more efficient operation as a result of more intelligent control.

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E. J. HANRAHAN DIES

Edward J. Hanrahan, 63-year old retired oil firm executive, died at his home in Tulsa last week. Mr. Hanrahan, formerly field superintendent for the Texas Pipe Line Co., retired five years ago when he became ill of heart disease. He was born in Olean, N. Y., and lived in Indiana several years before coming to Tulsa in 1913.

He is survived by the widow, Mrs. Helena Hanrahan; one daughter, Mrs. T. F. Hannigan, Ranger, Tex.; three sisters, Misses Catherine and Louise Hanrahan and Mrs. W. A. King, all of Dallas, Tex.; five brothers, J. J., Okmulgee; T. R. and R. V., Houston; W. G., Dallas, and J. C. Hanrahan, Kerrville, Tex.

Use of Electric Power for Pumping Oil Wells and in the Pipe Line Stations

Making AC drives suitable for pipe line pumping will continue to be a problem for both the operator and the electrical manufacturer until a system is worked out that meets all of the requirements exactly, said W. C. Dreyer of the Westinghouse Electric & Manufacturing Co., St. Louis, Mo., in a paper before the Petroleum Electric Power Club at Beaumont, Tex. This has not been done as yet, and it seems apparent that there is need for a variable speed AC drive other than any which now exists.

Until a few years ago practically all pipe lines were operated at the capacity for which they were designed and did not require adjustment of capacity. However, now it is considered necessary to operate many lines at reduced capacity efficiently and without excessive first cost.

The electric drive, using central station power, is fundamentally constant speed, and the inability to obtain variable speed economically and efficiently has always been regarded as a short-coming of this type of equipment. The electrical industry has been very anxious to find some nice method of varying speed for many years. Drives have been worked out suitable for many variable speed applications, however, paper mills, steel mills, and a great many other process industries would welcome a drive which would supersede the elaborate DC drives now used.

No system of speed control so far evolved is exactly suited to fill the needs of pipe line pump drives. The DC systems so successfully used elsewhere are not suitable because of the limitation in motor speed, increased hazard due to sparking of the commutator, and the expense of converting AC and DC power.

The phase wound or brush shifting AC motor has somewhat the same objectionable features in that it has a commutator which limits speed and increases maintenance expense.

The wound rotor motor is probably the most suited standard AC variable speed drive, particularly for centrifugal pumps, because the power drops off so rapidly with decreased speed that the actual losses oftentimes not prohibitive.

The various power recovery systems used in conjunction with the slip ring motor are not applicable to pipe line motors since the motor secondary losses are really of such small magnitude that the power is lost in the recovering system.

Further, a number of mechanical schemes have been suggested such as the use of a hydraulic coupling. The first cost and the power loss in the coupling are almost exactly comparable to a wound rotor motor and therefore not particularly adaptable to this application.

Electronic Tube Control

For some time there has been development work in progress using electronic tubes for obtaining speed control of AC motors. This work progressed in Europe before much was done on it in this country. A rail car with some such type of control has been in operation in Switzerland for several years—not entirely successful. However, in the past few years considerable work has been done and several articles have been published in this country on such a motor. The most recent of these articles in the October and November issues of the Electrical Engineering under "Thyration Motor" and Ignition Type of Diverters. This article gives a good discussion of the General Electric Co.'s work on this project and gives an indication of the operating characteristics and limitations of such a motor.

It seems evident that this type of motor is not yet suitable for pipe line pumping. Tube life in such service is not indefinite but of considerable length. The delicacy and need of skilled operators, and first cost of equipment, are the principal drawbacks.

Until a more suitable AC variable speed drive is found it will be necessary for the operators interested in electrification of pipe lines, to continue to use the drives available as advantageously as possible. Apparently the most satisfactory method is to select stations and units. In many cases this system of varying pipe line capacity does not give fine enough control and must be supplemented by other means of capacity variation. The use of a slip ring motor, throttling the output, and operation of some units part time have all been suggested. It seems that not enough emphasis has been placed on the possibility of using multispeed squirrel cage motors.

For instance, centrifugal pumps were used requiring 400 horsepower 1,750 r.p.m. motors. It would cost about $1,500 apiece to make these 1,750/1,160 r.p.m. motors. This would include the cost of the more complicated control. The power required on the low rating would be about 120 horsepower. Using such two-speed drives would add a great number of possible combinations and there would be no particular waste of power. The possible speeds are limited to the natural motor speeds, namely 3,500, 1,750, 1,160 and 875.

In all events, the electrical manufacturers are not through trying to evolve new types of variable speed drives, nor are the mechanical transmission people relaxing in their efforts to find better mechanical means of obtaining speed variation. Some new scheme appears every once in awhile. Some of them are quite far-fetched, and most of the workable ones are either suitable for small power requirements or else are too expensive to be practical.

Drilling and Pumping

Much thought and effort has been given in the past few years to improvement and operation of drilling equipment, said C. R. Bayless, engineer, Gulf Production Co., Houston, Tex.

The general tendency has been for larger and better equipment. This has advanced steam rigs from the former 10x10 single cylinder steam engine—45 horsepower boilers—10x5⅞x12 pumps to the present day equipment of three 100 horsepower boilers 12x12 and in some instances 14x14 twin cylinder engines and 14x7¼"x 18" high pressure pumps, an increase of 12 times in power for the 12x12, or 20 times for the 14x14 steam engines.

Electric drilling has made its advancement also having increased in size from one 30/15 horsepower oil well motor connected through a single reduction gear

Astra's electric power station, Argentina

to drawworks and one 30/15 horsepower motor driving a 4½x10 open type power mud pump to the present Hild drive type of differential reduction gear powered by two 125/250 horsepower variable speed motors on drawworks and one or two 7¼x16 mud pumps driven by a 200 horsepower variable speed motor. Sometimes an auxiliary pump of 6¾x12 is used in place of one of the 7¼x16 or larger pumps. This increases the power of the electric rig from 60 to 700 horsepower available or an increase of 11.7 times in power.

Each type of rig has its advantages, the steam rig owner can drill almost anywhere he chooses, but he may find the moving rather hard in some cases, also, fuel and water may cost him five times the ordinary price it would if favorably located.

Most oil companies find it more practical to confine their electric drilling to older and more developed fields where drilling depths have been predetermined and confine the size of their equipment to capacities suitable to a maximum of 5,000 to 5,500-foot drilling in preference to investing money in larger equipment of this type.

Coast Type Rig

The commonly used Hild drive electric rig such as is used in the coastal area powered by two 25/65 horsepower motors along with a 7¼x16 mud pump and 6¾x12 auxiliary pump seem to have its place very nicely on 4,000 to 5,000-foot wells.

In some fields, particularly Hull, a total of 14 wells have been drilled in the past year for an average depth per well of 4,440 feet and an average KWH consumption of 39,214 or an average of 9 KWH per foot.

Another type of rig which deserves mentioning and is very economical is the Sheldon Burden double Diesel hookup. This consists of two Diesel engines usually 175 to 240 horsepower that are set up so as to be compounded for hoisting or separately for drilling and driving slush pump. This arrangement is very flexible and compares most favorably with any other hookup that can be had for wildcat drilling.

One other type of power unit for drilling that should be placed in the wildcat field consists of Diesel engine driven DC generators which supply power to individual DC motors that drive the drawworks and pumps.

The control of this type of hookup is known as the Ward Leonard control system. By this system the output of the generators operating at constant speed is controlled by the amount of excitation of the generator field, thereby giving a gradual increase and decrease in speed of the motors very similar to opening and closing a steam throttle.

Additional Electric Drilling

Several factors are involved when it comes to a question of continued or increased use of electric drilling. Should it become practical to work over some present producing shallow (3,000 to 4,000-foot) wells in developed fields, various kinds of hookups, including single reduction gears, could be used to an advantage along with present 25/65 horsepower Hild drive.

Pumping

Under present proration regulations, the questions are which wells to pump, what with, and how much is it going to cost?

Every effort is being exerted to obtain the well's allowable with as little expense as possible. This has brought several methods into operation of helping a well utilize its own resources to produce its oil by installing various kinds of gas lifts.

In some wells it has been necessary to inject gas or air to help kick them over. After this, most of them flow their allowable for some time, after which it is necessary to use air regularly to secure production or equip with pumping unit.

For deep oil producing, the Reda pump has come in for a considerable amount of attention in the Oklahoma City Field. This pump consists of a 133-stage centrifugal pump driven by a 3,600 r.p.m. motor submerged in bottom of hole.

In the individual pumping unit class for pumping wells being completed at the present time at depths of 4,000 to 5,500 feet, the long stroke self-contained pumping unit seems to be satisfactory. It can be assembled and put in operation in a short time. The unit can be moved quickly and is practically 100 per cent salvable. It has a maximum stroke of 10 feet and a speed of 2 to 16 strokes per minute, which will allow it to be used as a slow pumping unit, thereby reducing the strain on surface and subsurface equipment. This unit is supplied with base for either engine or motor and is commonly used on wells that have a polished rod load of 8,000-16,000 pounds and will increase the overall efficiency 20 per cent.

Slow Pumping Motion

The application of slow pumping units or the slowing down of present pumping units on wells that do not produce over 50 bbls. of fluid is an item worthy of consideration. If this is tried by using the present 15/35 oil well motor and changing pulleys to reduce this speed, the difference of 28 per cent in efficiency of the oil well motor and a motor of 5 horsepower rating will pay for the smaller motor in power consumed in approximately nine months.

A very convenient method of accomplishing this purpose is by the installation of a 5 horsepower type gear motor with three-fourths pitch roller chain drive assembly and special combination pulley. This material is all salvable.

The chief reason for installing slow speed pumping units is to reduce the power cost; however, a true saving is reflected in all parts of the well operation. One thing to bear in mind is not to use this unit on wells that are making sand as the fluid velocity will not bring the sand out and this will result in a cleaning out job.

On a group of wells from which data were compiled, the average production before the change was 15.5 bbls. per well, afterwards 14.7 bbls. At present, these wells are averaging 14.9 bbls. and indicate that this unit is removing all the oil that enters the well.

H. A. MALARKEY DIES

Harry Andrew Malarkey, 39 years old, died suddenly of heart disease at his home in Cleveland, Okla. He was born at Oakdale, Pa., and moved to Oklahoma with his parents in 1904. He had been in the oil business with his father, a drilling contractor and lease operator.

JAMES LAWSON DIES

PETROLIA, Ontario, Jan. 19.—James Lawson, at one time active in the oil industry here and recently on the Imperial Oil, Ltd., staff at Sarnia, died there recently. His wife and one daughter survive.

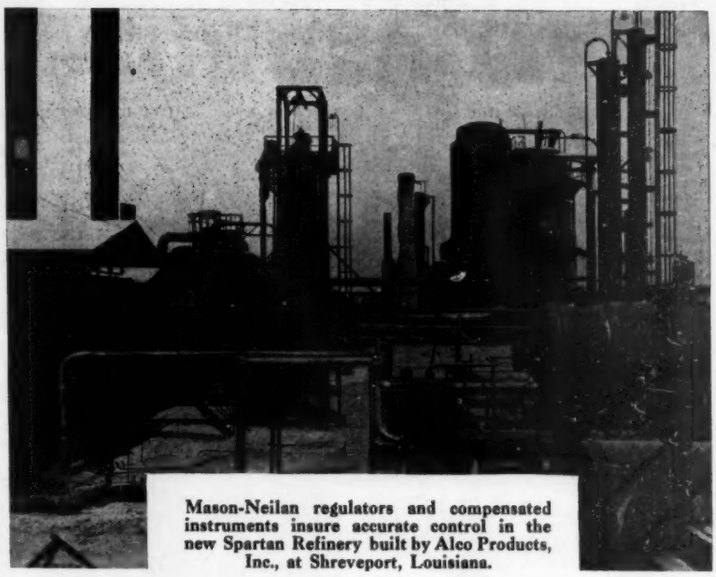
BRITISH AMERICAN OPERATIONS

MEDICINE HAT, Alberta, Jan. 19.—The British American Oil Co. is purchasing from the city a site in the east end of Medicine Hat, with a view to moving its warehouse closer in and providing room for extensions. Permission has also been asked for the building of a service station at the corner of Fourth and South Railway Streets.

T. J. ORR DIES

Thomas J. Orr, 48, died in Chicago, Ill., last week of acute indigestion. He was chief engineer for the Shell Petroleum Corp., refinery at East Chicago, and had been in Shell service for several years. He was widely known in Tulsa, Ponca City and throughout the Mid-Continent. He lived in Tulsa from 1913 to 1918, when he was chief engineer at the Cosden refinery, now the Mid-Continent refinery. He later was chief engineer for the Marland Oil Co. at its refinery in Ponca City, and from there went with the Shell.

MASON-NEILAN CONTROLLERS
for Vital Points
in Spartan Installation



Mason-Neilan regulators and compensated instruments insure accurate control in the new Spartan Refinery built by Alco Products, Inc., at Shreveport, Louisiana.

The Spartan Refinery built by Alco incorporates the most recent advancements in Gyro Vapor-Phase cracking. This new plant establishes a new high in the economy and safety of its operation, in the quality of its output . . . *and in its completely automatic control.* For many of these *major control jobs,* the designers selected Mason-Neilan regulators and instruments.

You will find this same confidence in Mason-Neilan regulation wherever refinery profits depend on accurate, reliable control equipment. For Mason-Neilan control devices have been developed *in and for* the Oil Industry by engineers who know its peculiar needs and limitations.

Whether you are planning a new refinery or gasoline plant, or trying to get better results from an older one—you will find it convenient and *profitable* to put your entire control problem squarely up to one of our experienced engineers. And for exact control of pressure, temperature, rate-of-flow and liquid level, install Mason-Neilan regulators and instruments.

MASON-NEILAN
REGULATOR COMPANY
1190 Adams Street, Boston, Mass.

BALTIMORE, Whitaker Bldg.	Morton Mel, Dukehart & Co.
CHICAGO, 435 North Michigan Ave.	Gordon Thomason, Mgr.
HOUSTON, 1400 Conti St.	Maintenance Engineering Corp.
LOS ANGELES, 2446 Enterprise St.	Tunnell & Co.
MONTREAL, CANADA, 620 Cathcart St.	Maurice Peller, Mgr.
NEW YORK, 19 Rector St.	A. L. Krock, Mgr.
PHILADELPHIA, 930 North Front St.	Bazuerle & Morris, Inc.
PITTSBURGH, Clark Bldg.	Bruce Irwin, Mgr.
ST. LOUIS, 2726 Locust Blvd.	O'Brien Equipment Co.
SYRACUSE, N. Y., 640 Gurney Bldg.	O'Brien Steam Specialty Co.
TULSA, 409 East Archer St.	Moorlane Co.

YOU CAN BE SURE OF MASON NEILAN PRODUCTS

Summary of Operations in All Fields for December, 1934

SUMMARY OF ALL FIELDS

Wells Completed

	Comp.	Prod.	Dry	Gas
Penna. Grade fields	307	862	17	41
Central Ohio	49	532	13	20
Lima	2	5	1	0
Indiana	12	200	4	4
Kentucky	12	405	2	0
Michigan	44	4,608	10	9
Kansas	73	42,144	13	4
Oklahoma	160	42,512	51	9
N. Central Texas	198	14,058	80	3
West Texas	64	20,169	15	0
Texas Panhandle	28	6,848	0	2
E. Central Texas	9	330	4	0
East Texas	280	16,584	4	0
East Texas gas area	2	0	2	0
Gulf Coast Texas	83	22,980	33	5
Southwest Texas	125	15,456	64	10
North Louisiana	30	235	12	10
Gulf Coast Louisiana	36	19,258	6	1
Arkansas	13	4,692	7	0
Mississippi	2	0	1	1
Montana	13	1,358	0	1
Wyoming	10	405	0	1
Colorado	3	20	1	1
New Mexico	21	38,181	4	0
Total December	1,466	251,842	344	122
Total November	1,491	263,853	366	155
Difference	25	12,091	22	33

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Penna. Grade fields	52	190	242
Central Ohio	35	149	184
Lima	3	35	38
Indiana	1	58	59
Illinois	0	20	20
Kentucky	0	20	20
Michigan	124	137	261
Kansas	37	197	234
Oklahoma	65	481	546
North Central Texas	64	200	264
West Texas	50	165	215
Texas Panhandle	26	123	149
East Central Texas	15	42	57
East Texas	111	156	267
East Texas gas area	2	13	15
Gulf Coast Texas	32	97	129
Southwest Texas	45	99	144
North Louisiana	24	64	88
Gulf Coast Louisiana	29	68	97
Arkansas	9	52	61
Mississippi	1	12	13
Alabama	1	2	3
Montana	10	43	53
Wyoming	7	69	76
Colorado	3	25	28
New Mexico	16	86	102
Utah	1	14	15
Total December	783	2,597	3,380
Total November	792	2,620	3,412
Difference	9	23	32

Oklahoma Fields

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Osage	20	6,393	6	0
Garfield	1	0	1	0
Noble	4	4,151	0	0
Creek	16	1,585	4	1
Logan	3	631	0	1
Lincoln	7	1,280	5	0
Oklahoma	6	3,622	0	0
Pottawatomie	18	9,015	2	0
Seminole	7	1,315	3	0
Hughes	4	8	2	0
McIntosh	3	0	1	2
Okmulgee	8	57	4	0
Tulsa	2	20	1	0
Muskogee	5	120	0	1
Wagoner	1	0	1	0
Cleveland	1	0	1	0
Okfuskee	3	35	1	0
Pontotoc	20	7,979	6	3
Harper	1	0	1	0
Roger Mills	1	0	1	0
Comanche	4	16	0	0
McCurtain	1	0	1	0
Johnston	1	0	1	0
Atoka	1	0	1	0
Jackson	1	0	1	0
Marshall	4	14	1	0
Carter	6	1,097	1	1
Stephens	9	24	5	0
Jefferson	3	150	0	0
Total Dec.	169	42,512	51	9
Total Nov.	126	53,849	27	8
Difference	34	11,337	24	1

Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Murray	3	3	6
Atoka	1	11	12
Carter	0	17	17
Stephens	3	16	19
Jackson	0	6	6
Pushmataha	0	1	1
Jefferson	0	9	9
Marshall	9	10	13
Choctaw	0	2	2
Bryan	0	1	1
Pontotoc	10	61	71
Comanche	1	9	10
Garvin	0	1	1
Grady	0	4	4
Pittsburg	1	6	7
Leflore	0	1	1
Caddo	0	7	7
Hughes	2	7	9
Pottawatomie	8	40	48
Seminole	3	35	38
Kiowa	0	2	2
Beckham	1	2	3
Washita	0	1	1
Okfuskee	2	18	20
Oklahoma	9	19	28
Okmulgee	1	20	21
Lincoln	2	13	15
McIntosh	2	2	4
Canadian	1	0	1
Creek	5	42	47
Muskogee	0	8	8
Logan	1	13	14
Blaine	0	1	1
Payne	0	2	2
Tulsa	0	1	1
Kingfisher	1	0	1
Pawnee	1	3	4
Osage	21	46	67
Noble	2	11	13
Ellis	0	1	1
Garfield	0	2	2
Alfalfa	0	2	2
Kay	0	4	4
Grant	1	0	1
Texas	0	1	1
Total Dec.	85	461	546
Total Nov.	100	444	544
Difference	15	17	2

Kansas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Sumner	1	0	1	0
Cowley	3	0	1	2
Sedgwick	10	3,039	2	0
Butler	6	720	1	0
Reno	8	21,948	0	1
Greenwood	6	197	2	0
Rice	11	6,815	1	0
Ellsworth	4	1,002	1	0
Russell	10	6,758	0	0
McPherson	3	425	1	0
Rush	2	0	1	1
Barber	1	110	0	0
Elk	3	132	0	0
Barton	1	0	2	0
Harvey	3	948	0	0
Total Dec.	73	42,144	13	4
Total Nov.	69	32,746	17	5
Difference	4	9,398	4	1

Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Rooks	0	1	1
Osborne	0	1	1
Russell	10	22	32
Trego	1	2	3
Clay	0	2	2
Osborne	0	1	1
Ellis	0	1	1
Saline	0	1	1
Dickinson	0	1	1
Barton	3	8	11
Ellsworth	0	4	4
Rush	1	5	6
McPherson	6	27	33
Rice	3	23	26
Ness	0	1	1
Scott	0	1	1
Harvey	0	8	8
Reno	5	37	42
Butler	2	12	14
Sedgwick	4	13	17
Stafford	0	1	1
Greenwood	0	2	2
Kingman	2	2	4
Pratt	0	1	1
Sumner	0	5	5
Barber	0	2	2
Cowley	0	7	7
Elk	0	6	6
Total Dec.	37	197	234
Total Nov.	36	176	212
Difference	1	21	22

North Central Texas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Archer	79	5,087	24	0
Baylor	1	0	1	0
Brown	1	0	0	0
Callahan	3	0	3	0
Clay	1	35	0	0
Coleman	2	0	1	1
Cooke	8	1,315	5	0
Eastland	3	0	2	1
Foard	1	2,000	0	0
Jack	6	150	3	1
Montague	11	2,357	1	0
Palo Pinto	2	31	0	0
Shackelford	13	343	6	0
Stephens	0	0	0	0
Throckmorton	1	0	1	0
Wichita	35	458	19	0
Wilbarger	1	282	2	0
Young	24	1,500	12	0
Total December	198	14,058	80	3
Total November	176	6,502	72	5
Difference	22	7,556	8	2

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Archer	20	2	36	58
Baylor	0	1	0	1
Brown	1	2	10	13
Callahan	0	1	6	7
Clay	1	2	4	7
Coleman	0	2	6	8
Comanche	0	2	1	3
Cooke	2	4	3	9
Denton	0	1	0	1
Eastland	1	4	4	9
Erath	0	0	2	2
Foard	0	0	1	1
Hardeman	1	0	0	1
Haskell	0	1	0	1
Hamilton	0	1	0	1
Jack	3	1	5	9
Knox	0	1	0	1
Lampasas	0	1	0	1
McCulloch	0	1	0	1
Mills	0	0	2	0
Montague	5	0	4	9
Palo Pinto	1	1	2	4
Parker	0	2	0	2
Shackelford	4	8	9	21
Stephens	0	3	1	4
Tarrant	0	1	0	1
Throckmorton	1	3	4	8
Wichita	8	4	18	30
Wilbarger	3	2	4	9
Wise	2	0	0	2
Young	10	6	21	37
Total December	64	57	143	264
Total November	62	51	151	264
Difference	2	6	8	0

East Central Texas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Anderson	3	239	0	0
Cherokee	1	0	1	0
Fannin	0	0	0	0
Freestone	0	0	0	0
Gregg	126	8,117	1	0
Hopkins	0	0	0	0
Hunt	1	0	1	0
Morris	1	0	1	0
Red River	1	0	1	0
Rusk	125	6,803	1	0
Smith	10	528	0	0
Upshur	18	1,136	1	0
Van Zandt	3	91⅓	1	0
Total December	289	16,914⅓	8	0
Total November	260	12,081	17	3
Difference	29	3,833⅓	9	3

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Anderson	4	0	5	9
Bowie	1	0	0	1
Cherokee	3	0	2	5
Ellis	0	1	0	1
Freestone	2	0	1	3
Gregg	55	1	64	120
Henderson	0	1	1	2
Hopkins	0	1	0	1
Hunt	1	1	1	3
Kaufman	0	2	0	2
Leon	0	0	0	0
Limestone	2	4	3	9
Morris	0	1	0	1
Nacogdoches	1	1	0	2
Navarro	0	4	0	4
Red River	1	1	0	2
Rusk	39	3	66	108
Smith	5	3	8	16
Upshur	9	0	9	18
Van Zandt	3	7	7	17
Total December	126	31	167	324
Total November	122	45	162	329
Difference	4	14	5	5

West Texas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Andrews	3	542	1	0
Crane	1	421	0	0
Ector	6	3,244	1	0
Fisher	3	100	1	0
Glasscock	4	617	0	0
Howard	6	3,232	0	0
Irion	2	25	1	0
Jones	7	17	6	0
Pecos	6	594	1	0
Reagan	1	0	1	0
Runnels	2	50	1	0
Sterling	0	0	0	0
Taylor	2	50	1	0
Upton	3	2,012	0	0
Ward	16	8,965	1	0
Winkler	2	290	0	0
Total December	64	20,169	15	0
Total November	51	43,973	11	1
Difference	13	23,804	4	1

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Andrews	1	0	5	6
Brewster	0	3	0	3
Cochran	1	1	0	2
Coke	0	1	0	1
Crane	7	1	4	12
Crockett	1	0	1	2
Culberson	0	2	1	3
Dawson	0	1	0	1
Ector	5	2	10	17
El Paso	0	1	0	1
Fisher	3	0	7	10
Glasscock	1	4	4	9
Howard	5	8	11	24
Irion	1	0	0	1
Jeff Davis	0	1	0	1
Jones	1	3	6	10
Loving	1	2	1	4
Lynn	0	0	1	1
Martin	1	0	0	1
Mitchell	1	1	0	2
Pecos	1	9	3	13
Presidio	0	1	0	1
Reagan	0	0	1	1
Reeves	1	1	0	2
Runnels	2	4	6	12
Schleicher	1	1	1	3
Scurry	0	1	1	2
Sterling	1	0	0	1
Stonewall	0	0	1	1
Sutton	0	0	1	1
Taylor	0	0	2	2
Terrell	0	1	0	1
Upton	1	5	3	9
Ward	10	6	20	36
Winkler	4	6	9	19
Total December	50	66	99	215
Total November	40	59	98	197
Difference	10	7	1	18

Texas Panhandle

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Carson	0	0	0	0
Gray	13	3,367	0	0
Hutchinson	7	1,516	1	2
Moore	1	14	0	0
Wheeler	7	1,951	1	0
Total December	28	6,848	0	2
Total November	38	10,409	2	4
Difference	20	3,561	2	2

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Carson	3	0	6	9
Childress	1	0	1	2
Collingsworth	0	1	0	1
Deaf Smith	0	1	0	1
Dallam	0	1	0	1
Gray	11	1	53	65
Hutchinson	3	2	20	25
Moore	1	2	3	6
Potter	0	0	1	1
Randall	0	0	1	1
Roberts	0	1	1	2
Wheeler	7	6	22	35
Total December	26	15	108	149
Total November	44	17	97	158
Difference	18	2	11	9

Southwest Texas Fields

Summary of Field Operations

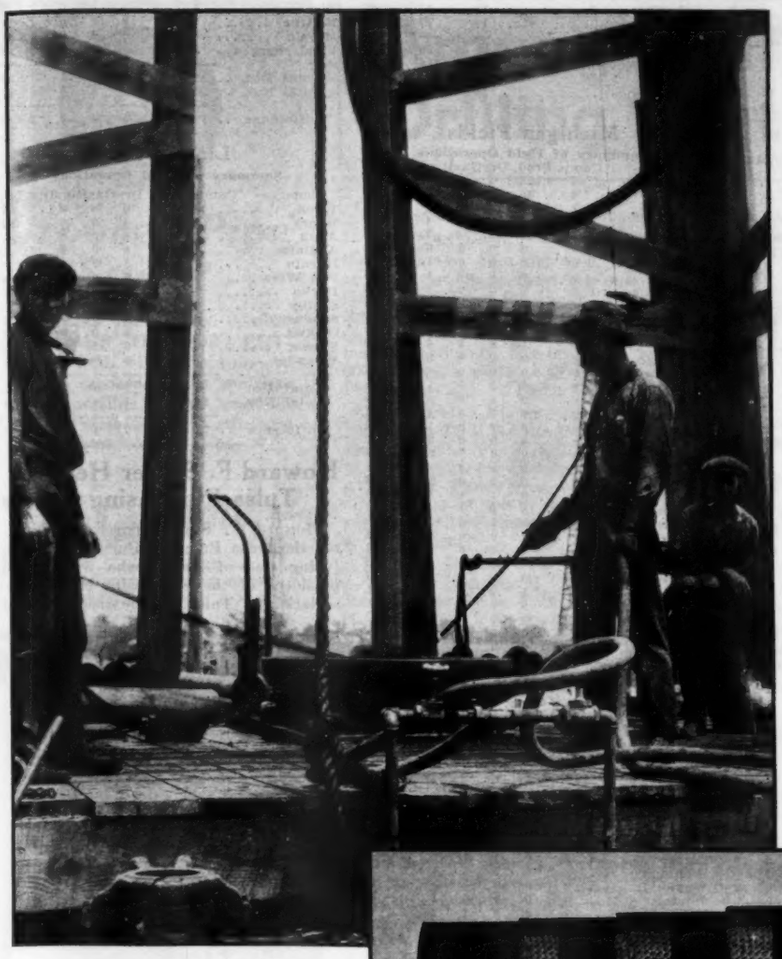
Field—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Agua Dulce	0	0	0	0	0	1	1
Alta Mesa	0	0	0	0	0	2	2
Arroyo Grande	0	0	0	0	0	1	1
Blas Uribe	0	0	0	0	0	1	1
Byersville	0	0	0	0	2	1	3
Dunlap	0	0	0	0	0	1	1
Caesar	2	235	0	0	0	2	2
Cedar Creek	0	0	0	0	0	1	1
West Cole	0	4,798	0	1	0	10	10
North Dale	1	10	0	0	0	3	3
Darst Creek	0	0	0	0	0	1	1
Escobas	2	20	0	1	0	0	0
Sam Fordyce	12	3,453	4	0	10	6	16
Gov. Wells	25	4,631	3	0	3	5	8
Hech	0	0	0	0	0	1	1
Hoffman	0	0	0	0	0	1	1
Jacobs	8	262	5	0	4	0	4
Jeffries-Lambeth	1	0	1	0	0	0	0
Jennings	2	20	0	0	1	0	1
Los Olmos	0	0	0	0	0	1	1
Lucas	1	55	0	0	0	0	0
Martinez	4	0	0	4	0	0	0
McNeil	0	0	0	0	0	1	1
Normana	1	25	0	0	0	0	0
North Pettus	1	0	1	0	0	0	0
Randado	1	0	0	1	1	0	1
Rio Grande City	0	0	0	0	0	1	1
Sandia	1	0	0	1	0	1	1
Seeligson	0	0	0	0	0	1	1
Sinton	1	50	0	0	0	1	1
Two Rivers Ranch	1	0	1	0	0	0	0
West Tuleta	5	1,022	0	0	1	7	8
Miscellaneous	56	875	49	2	21	51	72
Total Dec.	125	15,456	64	10	45	99	144
Total Nov.	126	15,861	67	6	45	123	168
Difference	1	405	3	4	0	24	24

Gulf Coast Fields

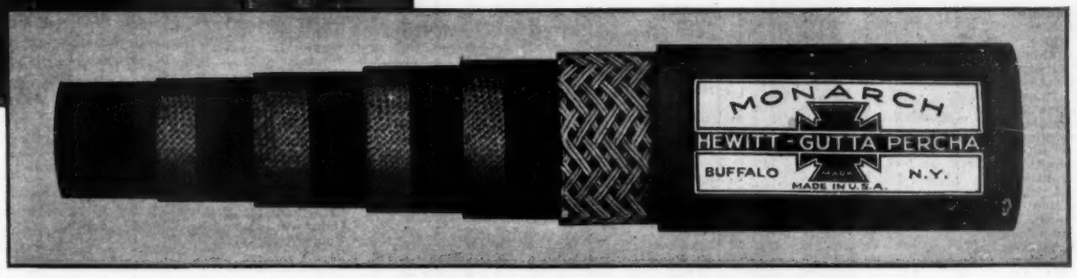
TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Drg.	Ttl.
Arriola	2	580	1	0	0	0	0
Barbers Hill	6	1,717	0	1	2	10	12
Batson	0	0	0	0	1	0	1
Big Creek	0	0	0	0	0	1	1
Boling	1	500	0	0	1	3	4
Buckeye	0	0	0	0	0	1	1
Clay Creek	0	0	0	0	0	2	2
Cleveland	0	0	0	0	1	1	2
Coletto Creek	2	0	2	0	0	0	0
Conroe	6	2,906	1	0	2	3	5
Damon Mound	0	0	0	0	2	1	3
Danbury	0	0	0	0	0	2	2
Dickinson	2	149	0	0	0	1	1
Esperson	1	0	1	0	0	3	3
Fannett	1	0	1	0	0	0	0
Goose Creek	0	0	0	0	0	1	1
Greta	6	992	0	1	2	0	2
Hankamer	1	1,200	0	0	0	0	0
High Island	1	220	0	0	1	2	3
Hull	2	12	1	0	0	3	3
Humble	0	0	0	0	0	1	1
Kittrell	3	1,920	1	0	0	2	2
Livingston	1	0	1	0	0	2	2
Louise	0	0	0	0	0	4	4
Manvel	4	434	2	0	0	5	5
McFaddin-O'Connor	1	0	1	0	0	1	1
Mykawa	1	40	0	0	0	2	2
Orchard	0	0	0	0	0	1	1
Pierce Junc.	2	64	0	0	0	3	3
Port Neches	0	0	0	0	1	2	4
Raccoon Bend	2	1,536	2	0	1	3	4
Refugio	4	495	1	1	1	4	6
San Felipe	0	0	0	0	0	2	2
Saratoga	2	285	1	0	0	1	1
Sour Lake	2	0	1	1	0	2	3
Spindletop	0	0	0	0	0	1	1



LONGER LIFE *for* STEAM HOSE



HEWITT MONARCH HOSE IS BUILT FOR THE OIL INDUSTRY

● We know the hard life that is the lot of steam hose in rotary drilling cleaning operations. HEWITT Monarch steam hose is built to take the abusive action of abrasives, oils and greases... abuse that takes the heart out of ordinary steam hose. Strong braid imbedded in the rubber cover completely prevents stripping or separation, and the temperature and pressure of saturated steam at 80 pounds per square inch means nothing to HEWITT Monarch Hose. A hose built for the oil industry.

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HEWITT RUBBER CORPORATION

BUFFALO NEW YORK

HOSE CONVEYOR AND TRANSMISSION BELTS PACKING

Thompson	1	264	0	0	0	2	2
Tomball	0	9,235	0	1	3	4	7
Vanderbilt	0	0	0	0	2	0	2
Miscellaneous	18	511	16	0	12	18	30
Total Dec.	83	22,980	33	5	32	97	129
Total Nov.	81	33,015	22	6	31	91	122
Difference	2	10,035	11	1	1	6	7

LOUISIANA

Summary of Field Operations

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Dlg.	Ttl.
Bay St. Elaine	0	0	0	0	0	1	1
Black Bayou	1	99	0	0	2	1	3
Bosco	9	5,742	1	0	3	7	10
Cameron Meadows	1	0	1	0	1	1	2
Dog Lake	0	0	0	0	0	1	1
Gillis Area	1	1,500	0	0	3	1	4
Gueydan	0	0	0	0	0	1	1
Hackberry	3	555	1	0	2	4	6
Iowa	4	2,175	0	0	2	4	6
Jennings	0	0	0	0	0	2	2
Lake Barre	1	1,700	0	0	2	0	2
Lake Hermitage	0	0	0	0	0	1	1
Lake Washington	1	0	1	0	0	2	2
Leesville	6	5,756	0	0	0	6	6
Lockport	2	800	0	0	0	2	2
New Iberia	0	0	0	0	0	2	2
Port Barre	1	180	0	0	1	1	2
Roanoke	1	0	0	1	0	6	6
Sorrento	0	0	0	0	0	1	1
Sulphur	2	650	0	0	0	4	4
Sweet Lake	0	0	0	0	0	0	1
Vinton	1	100	0	0	0	1	1
White Castle	0	0	0	0	0	1	1
Miscellaneous	2	0	2	0	13	17	30
Total Dec.	36	19,258	6	1	29	68	97
Total Nov.	31	15,515	10	0	28	86	114
Difference	5	3,743	4	1	1	18	17

GULF COAST

Summary of Field Operations

	Comp.	Prod.	Abd.	Gas	Rigs	Dlg.	Ttl.
Total Dec.	119	42,238	39	6	61	165	226
Total Nov.	112	48,530	32	6	59	177	236
Difference	7	6,292	7	0	2	12	10

Louisiana Fields

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry Gas*	Rigs	Dlg.	Ttl.
Avoyelles	0	0	0	0	1	1
Bienville	0	0	0	0	2	2
Bossier	5	30	1	2	3	4	7
Caddo	5	40	1	3	6	12	18
Catahoula	1	0	0	0	0	1	1
Claiborne	0	0	0	0	1	1	2
DeSoto	5	0	4	1	0	11	11
E. Carroll	0	0	0	0	0	1	1
Grant	0	0	0	0	0	1	1
LaSalle	0	0	0	0	0	2	2
Morehouse	1	0	1	0	0	0	0
Natchitoches	0	0	0	0	0	5	5
Ouachita	4	0	1	3	2	1	3
Rapides	0	0	0	0	1	0	1
Red River	3	10	2	0	1	3	4
Sabine	5	155	2	0	8	16	24
Tensas	0	0	0	0	0	1	1
Union	1	0	0	1	0	2	2
Webster	0	0	0	0	2	0	2
Ttl. Dec.	30	235	12	10	24	64	88
Ttl. Nov.	33	290	13	11	31	76	107
Difference	3	55	1	1	7	12	19

*Gas production: Bossier, 74,400,000 feet; Caddo, 5,500,000 feet; DeSoto, 500,000 feet; Ouachita, 7,250,000 feet; Union, 4,000,000 feet; total, 91,650,000 feet.

East Texas Border Counties

Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rigs	Dlg.	Ttl.
Cass	1	0	1	0	1	0	1
Harrison	1	0	1	0	0	2	2
Marion	0	0	0	0	0	2	2
Panola	0	0	0	0	1	5	6
Shelby	0	0	0	0	0	4	4
Ttl. Dec.	2	0	2	0	2	13	15
Ttl. Nov.	0	0	0	0	3	14	17
Difference	2	0	2	0	1	1	2

Arkansas Fields

Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rigs	Dlg.	Ttl.
Arkansas	0	0	0	0	0	1	1
Calhoun	0	0	0	0	0	1	1
Hempstead	2	0	2	0	0	2	2
Lafayette	2	0	2	0	1	3	4
Little River	0	0	0	0	0	2	2
Lonoke	0	0	0	0	0	1	1
Miller	0	0	0	0	4	10	14
Nevada	0	0	0	0	1	1	2
Ouachita	0	0	0	0	0	3	3
Poinsett	0	0	0	0	0	1	1
St. Francis	0	0	0	0	0	1	1
Union	9	4,692	3	0	2	25	27
Woodruff	0	0	0	0	1	1	2
Ttl. Dec.	13	4,692	7	0	9	52	61
Ttl. Nov.	6	925	3	0	14	38	52
Difference	7	3,767	4	0	5	14	9

Mississippi Fields

Summary of Field Operations

	Comp.	Prod.	Dry Gas*	Rigs	Dlg.	Ttl.
Amite	0	0	0	0	0	1	1
Bolivar	0	0	0	0	0	1	1
Greene	1	0	1	0	0	0	0
Harrison	0	0	0	0	0	1	1
Hinds	1	0	0	1	0	1	1
Issequena	0	0	0	0	0	1	1
Jones	0	0	0	0	0	1	1
Lauderdale	0	0	0	0	0	1	1
Monroe	0	0	0	0	0	2	2
Scott	0	0	0	0	0	1	1
Simpson	0	0	0	0	1	0	1
Washington	0	0	0	0	0	1	1
Winston	0	0	0	0	0	1	1
Ttl. Dec.	2	0	1	1	1	12	13
Ttl. Nov.	0	0	0	0	1	14	16
Difference	2	0	1	1	0	2	3

*Gas production: Hinds County, 27,400,000 feet.

Kentucky Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ohio	12	405	2	0	0	10	10
Hancock	0	0	0	0	0	6	6
Allen	0	0	0	0	0	3	3
McLean	0	0	0	0	0	1	1
Total Dec.	12	405	2	0	0	20	20
Total Nov.	57	2,116	22	1	1	25	26
Difference	45	1,711	20	1	1	5	6

Rocky Mountain Area

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Chaves	1	0	1	0	0	2	2
Dina Ana	1	0	1	0	0	0	0
Eddy	1	20	0	0	0	10	10
Guadalupe	1	0	1	0	0	1	1
Hidalgo	1	0	1	0	0	0	0
Lea	14	37,981	0	0	13	37	50
McKinley	0	0	0	0	0	5	5
San Juan	2	180	0	0	1	12	13
San Miguel	0	0	0	0	0	7	7
Santa Fe	0	0	0	0	0	3	3
Valencia	0	0	0	0	1	4	5
Miscellaneous	0	0	0	0	1	5	6
Ttl. Dec.	21	38,181	4	0	16	86	102
Ttl. Nov.	16	25,041	4	3	11	78	89
Difference	5	13,140	0	3	5	8	13

WYOMING

Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rgs.	Dlg.	Ttl.
Albany	1	60	0	0	1	1
Big Horn	0	0	0	3	7	10
Carbon	1	0	0	1	0	7	7
Converse	1	0	0	1	0	6	6
Crook	0	0	0	0	0	7	7
Fremont	1	2	0	0	0	6	6
Lincoln	0	0	0	0	0	4	4
Niobrara	0	0	0	0	0	3	3
Park	0	0	0	0	1	3	4
Sweetwater	4	298	0	0	0	3	3
Sublet	1	15	0	0	0	3	3
Uinta	0	0	0	0	0	6	6
Weston	1	30	0	0	3	6	9
Miscellaneous	0	0	0	0	0	7	7
Ttl. Dec.	10	405	0	1	7	69	76
Ttl. Nov.	11	928	1	1	10	73	83
Difference	1	523	1	0	3	4	7

COLORADO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Adams	0	0	0	0	1	1	2
Boulder	1	0	0	1	0	0	0
El Paso	1	0	1	0	0	0	0
Grand	0	0	0	0	0	2	2
Huerfano	0	0	0	0	0	3	3
Jackson	0	0	0	0	0	2	2
Larimer	0	0	0	0	0	3	3
Moffat	1	20	0	0	1	1	2
Miscellaneous	0	0	0	0	1	13	14
Ttl. Dec.	3	20	1	1	3	25	28
Ttl. Nov.	2	2,208	1	0	4	28	32
Difference	1	2,188	0	1	1	3	4

MONTANA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Carbon	1	352	0	0	0	2	2
Cascade	0	0	0	0	0	3	3
Fergus	0	0	0	0	0	3	3
Glacier	9	978	0	0	8	11	19
Liberty	0	0	0	0	0	4	4
Toole	3	28	0	1	1	11	12
Miscellaneous	0	0	0	0	1	9	10
Total Dec.	13	1,358	0	1	10	42	53
Total Nov.	14	618	4	2	8	44	52
Difference	1	740	4	1	2	1	1

UTAH

	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Total Dec.	0	0	0	0	1	14	15
Total Nov.	0	0	0	0	1	14	15
Difference	0	0	0	0	0	0	0

Eastern Fields

Summary of Completed Work

Field—	Comp.	Prod.	Dry	Gas
Bradford	99	143	0	
Allegany	8	5	0	0
Venango-Clarion	7	6	1	1
Butler-Armstrong	1	5	0	0
S.W. Pennsylvania	11	9	2	6
S.E. Ohio	30	381	5	6
West Virginia	51	313	9	28
Total December	207	862	17	41
Total November	239	968	29	37
Difference	32	106	12	4

Summary of Work Under Way

Field—	Rigs	Drlg.	Ttl.
Bradford	7	58	65
Allegany	0	2	2
Venango-Clarion	2	5	7
Butler-Armstrong	1	5	6
S.W. Pennsylvania	7	16	23
S.E. Ohio	16	27	43
West Virginia	19	77	96
Total December	52	190	242
Total November	66	210	276
Difference	14	20	34

Michigan Fields

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Midland	7	3,820	2	0	22	24	46
Isabella	6	35	1	4	21	33	54
Oceana	2	100	1	0	9	15	24
Gratiot	2	0	2	0	4	2	6
Mecosta	5	0	2	2	7	6	13
Huron	0	0	0	0	0	1	1
St. Clair	0	0	0	0	3	0	3
Clinton	0	0	0	0	1	0	1
Clare	0	0	0	0	3	0	3
Kent	0	0	0	0	1	3	4
Emmett	0	0	0	0	1	1	2
Cass	0	0	0	0	6	1	7
Sanilac	0	0	0	0	3	0	3
Newyago	0	0	0	0	0	3	3
Saginaw	0	0	0	0	4	3	7
Shiawassee	0	0	0	0	1	4	5
Allegan	0	0	0	0	3	2	5
Livingston	0	0	0	0	1	3	4
Alpena	0	0	0	0	1	0	1
Oakland	0	0	0	0	0	2	2
Monroe	0	0	0	0	0	1	1
Alcona	0	0	0	0	2	0	2
Macomb	0	0	0	0	2	1	3
Montcalm	2	0	1	1	1	10	11
Muskegon	2	10	0	1	4	7	11
Ogemaw	6	505	1	0	13	9	22
Gladwin	1	33	0	0	0	1	1
Eaton	0	0	0	0	0	1	1
Hillsdale	0	0	0	0	0	2	2
Lenawee	0	0	0	0	1	0	1
LaPeer	1	5	0	0	2	2	5
Bay	0	0	0	0	2	0	2
Roscommon	0	0	0	0	2	0	2
Mason	0	0	0	0	2	0	2
Chippewa	0	0	0	0	1	0	1
Total Dec.	34	4,603	10	9	124	137	261
Total Nov.	30	6,165	12	5	98	158	256
Difference	4	1,557	2	4	26	21	5

Central Ohio Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ashland	3	0	1	2	1	1	2
Medina	9	43	1	2	2	7	9
Holmes	2	32	1	0	4	3	7
Cuyahoga	1	0	0	1	0	1	1
Lorain	2	0	1	1	0	6	6
Richland	1	0	0	1	1	2	3
Wayne	0	0	0	0	0	5	5
Summitt	0	0	0	0	1	4	5
Fairfield	1	0	0	1	2	2	4
Knox	1	40	0	0	3	7	10
Coshocton	1	89	0	0	1	3	4
Licking	6	163	2	1	2	4	6
Muskingum	3	48	1	1	0	14	14
Athens	2	0	1	1	2	16	18
Tuscarawas	0	0	0	0	0	8	8
Stark	1	0	0	1	4	14	18
Belmont	0	0	0	0	1	3	4
Portage	0	0	0	0	0	1	1
Crawford	0	0	0	0	0	1	1
Delaware	1	0	1	0	0	0	0
Guernsey	4	16	1	2	5	15	24
Gallia	1	0	1	0	0	5	5
Scioto	0	0	0	0	0	1	1
Pike	0	0	0	0	0	2	2
Carroll	0	0	0	0	0	1	1
Vinton	0	0	0	0	0	1	1
Lawrence	0	0	0	0	1	2	3
Meigs	8	4	2	5	3	17	20
Harrison	0	0	0	0	1	3	4
Perry	2	97	0	1	1	3	4
Total Dec.	49	532	13	20	35	149	184
Total Nov.	85	211	23	48	32	142	174
Difference	36	221	10	28	3	7	10

Illinois Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	0	0	0	0	0	5	5
Crawford	0	0	0	0	0	7	7
Marion	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Macoupin	0	0	0	0	0	1	1
Perry	0	0	0	0	0	1	1
Bond	0	0	0	0	0	1	1
Wabash	0	0	0	0	0	1	1
Clinton	0	0	0	0	0	1	1
Jasper	0	0	0	0	0	1	1
Total Dec.	0	0	0	0	0	20	20
Total Nov.	3	90	2	0	0	21	21
Difference	3	90	2	0	0	1	1

Indiana Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Gibson	1	0	0	1	1	4	5
Sullivan	0	0	0	0	0	4	4
Pike	1	0	0	1	0	2	2
Daviess	1	0	0	1	0	4	4
Warrick	0	0	0	0	0	3	3
Spencer	2	50	0	0	0	2	2
Harrison	0	0	0	0	0	1	1
Porter	0	0	0	0	0	2	2
Henry	0	0	0	0	0	2	2
Shelby	0	0	0	0	0	1	1
Hancock	0	0	0	0	0	1	1
Lawrence	0	0	0	0	0	1	1
Monroe	0	0	0	0	0	1	1
Jay	0	0	0	0	0	3	3
St. Joe	0	0	0	0	0	1	1
Greene	0	0	0	0	0	1	1
Perry	1	0	1	0	0	6	6
Delaware	0	0	0	0	0	1	1
Knox	1	0	0	1	0	4	4
Dubois	0	0	0	0	0	2	2
Posey	1	50	0	0	0	1	1
Washington	1	0	1	0	0	1	1
Newton	0	0	0	0	0	1	1
Martin	0	0	0	0	0	1	1
Vanderburg	3	100	2	0	0	8	8
Total Dec.	12	200	4	4	1	58	59
Total Nov.	24	165	9	8	1	55	56
Difference	12	35	5	4	0	3	3

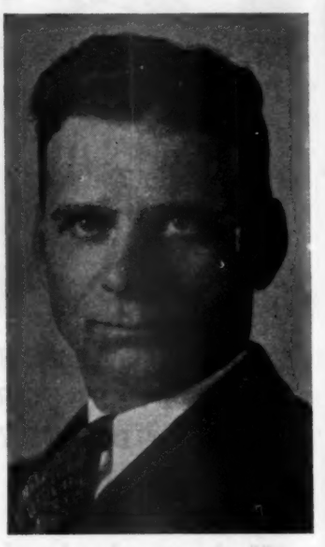
Lima Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	0	0	0	0	0	3	3
Henry	0	0	0	0	0	2	2
Allen	0	0	0	0	0	6	6
Auglaize	0	0	0	0	0	3	3
Hardin	1	0	1	0	0	0	0
Van Wert	0	0	0	0	0	4	4
Darke	0	0	0	0	0	3	3
Shelby	0	0	0	0	1	2	3
Sandusky	0	0	0	0	0	2	2
Ottawa	0	0	0	0	0	1	1
Seneca	0	0	0	0	0	2	2
Wyandot	1	5	0	0	2	7	9
Total Dec.	2	5	1	0	3	35	38
Total Nov.	14	107	1	4	2	32	34
Difference	12	102	0	4	1	3	4

Howard F. Stover Heads Tulsa Purchasing Agents

Howard F. Stover, purchasing agent for the Gaso Pump & Burner Manufacturing Co., of Tulsa, who was elected president of the Purchasing Agents Association of Tulsa, at the recent annual



HOWARD F. STOVER

meeting of that body and was installed in office on January 8, is the first purchasing agent for an equipment manufacturing company to have held this office. He has been a member of the association for 10 years, has been active in committee work throughout that period, and was successively second vice president and first vice president of the organization before being elected as its president.

Banker Believes Outlook Brighter for Oil Business

A strong crude oil market appears to be in the offing, according to R. Otis McClintock, president of the First National Bank & Trust Co. of Tulsa. In discussing the outlook for the petroleum industry, Mr. McClintock said further: "Taking everything into consideration, the prospects for the oil industry, as it moves into 1935, seem better than for the past several years.

"For the past 15 months our institution has pursued an active policy of solicitation of loans on producing oil properties through the medium of The Oil and Gas Journal; a policy which, we feel, has been helpful to the industry and to us, and is reflected in our statement at the close of 1934. This program has resulted in our obtaining many high class loans, thus employing a part of our idle funds and at the same time contributing to business recovery."

RED BALL CUTTING SERVICE

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Carried on the bottom of the Kelly Joint, the T-I-W Drill Stem Safety Valve serves as a blowout preventer to close the inside of the drilling string, removing all strain from and eliminating all danger of cutting out swivel, rotary hose and other connections. Valve has the same O. D. as a tool joint or pipe coupling, and is amply strong to stand hard drilling. Wherever a blowout preventer is used, a T-I-W Drill Stem Safety Valve should be used. Illustrated descriptive pamphlet on request.

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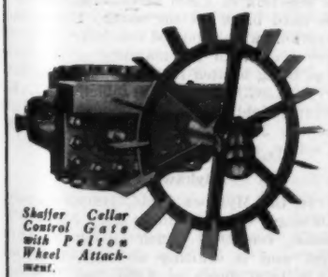

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Among Gulf Coast Drilling Contractors

L. W. Capps has finished Jones No. 1, San Felipe Dome, Waller County, for the Texas Co., as a dry hole, bottomed at 5,017 feet. Same contractor has completed a producer for H. M. Naylor at Rabbs Ridge, is drilling below 2,000 feet on a 5,000 foot test for Seaport Oil Co. in Walker County, and is drilling below 600 feet on a second well for the Shell Petroleum Corp. at Black Bayou, La.

John Deering has one rig running in the Batson Field for the Batson Oil Co., and is rigging up to drill a well near Midfield, Wharton County, for Deering and others. Latter well will be located on Section 1 of the S. A. & M. G. Survey, and will be carried as No. 1 C. T. & D. Kountze.

C & C Drilling Co. has completed a producer for H. M. Naylor in the Rabbs Ridge Field, Fort Bend County; has completed a producer for the Gem Oil Co., carried as No. 6 Davis & Holmes, in the Livingston Field; and has spudded on another well for the Gem Oil Co. in the same field.

W. Claud Smith, who recently completed Shearer No. 4 for the Texas Co. in the Tomball Field, Harris County, as a gasser, has just finished re-working the well in an effort to cut off some of the upper gas sand to make an oil producer. Setting 5-inch casing further in the sand, however, failed to improve the well, which remains after re-working a high pressure gas well.

Carlisle & Williams have moved their gasoline powered rotary rig to Bandera County, about 90 miles from San Antonio, where they will set up over the hole started by Gholson Drilling Co. with a string of cable tools. The boys opine that if the rock bit manufacturers can turn out enough bits, they will worry the hole down to 6,000 feet. Rock bit digging started at the grass roots, and plenty of it is anticipated. Gholson Drilling Co. will retain an interest in the prospect.

Jordan Drilling Co. has completed a dry hole at 2,505 feet for the Texas-New York Oil Co. and the Sunray Oil Co. in Madison County. This well was carried as No. 2 Ferguson State Farm. Same contractors are rigging up to drill a 4,500 foot test for Boone Brothers about three-fourths mile northwest of the discovery well in the Trinity Field, Houston County.

Rowan Drilling Co. has five rigs running at this time, scattered from Harris County, Texas, to Lea County, New Mexico. At Hobbs the company has a rig drilling for the Amerada Petroleum Corp; in Ecter County a rig is running for Neville-Penrose and others, located on Section 1, Block 45; in Gregg County a rig is running for the Tide Water Oil Co.; Cherokee County, 1 mile north of Reklaw, a rig is drilling a wildcat for the Rowan-Nichols and the Simms Oil Co.; in Harris county, one rig is running for the Amerada Petroleum Corp. in the Tomball Field.

Alamo Drilling Co. is rigging up in the Eureka Heights Field, Harris County, to drill a well for Means & McGehee. Location will be in the center of the NE 20 acres, in an 80-acre tract approximately half mile from the discovery well. Same contractors also have a rig on the discovery well, where screen has just been re-landed, and well adjudged a high pressure gas well, with a small potential of distillate. Alamo Drilling Co. has also completed a big producer for Means & McGehee in the Sam Fordyce Field, and are moving rig over to new location to drill another well for the same producers.

Edwards Drilling Co., which completed a well at Dickinson for the Pure Oil Co. late in 1934, are standing by preparing to deepen as quickly as the well can be killed. To date considerable difficulty has been experienced in killing this well. Same contractor's rig at Charenton Dome, St. Mary's Parish, La., is temporarily shut down waiting on orders.

Steen Drilling Co. is drilling at 3,019 feet on its well in Robertson County, located on a block of several thousand acres held by the company. Test will go to 5,000 feet, at least.

Having completed the discovery well in the Hastings Field, Brazoria County, for the Stanolind Oil & Gas Co., Loffland Brothers, drilling contractors, have two rigs drilling toward the pay in the same field. The photographer arrived on the lease five minutes too late to include J. M. Loffland, member of the contracting firm, who had just left for the Houston air port to fly to West Texas. J. M. Loffland, Jr., however, is a member of the roughneck crew. Those in the picture are, reading right to left, top row: Ralph Bish, driller; R. H. (Slats) Patterson, superintendent for Stanolind; Earl Hagy, field man for Wilson Supply Co.; T. L. Matthews, field foreman for Stanolind; A. J. Penick, president Oil Center Tool Co.; (Bottom row): Earl Niell, John Dow, Jack Loffland, Jr., Ray Tindel, J. R. Sloan, fireman

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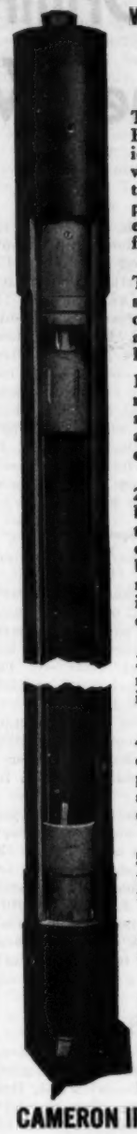

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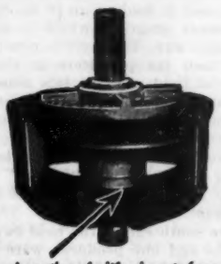

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HOUSTON . . . TEXAS

New Drilling Activity Starts in Manvel District; Nome Wildcat Test Being Closely Watched

By F. L. SINGLETON
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Jan. 21.—While the outcome of a test of a deep sand encountered in a wildcat drilled by Sun Oil Co. in the Nome area of northwestern Jefferson County was being awaited over the week end, renewed interest was being turned to the Manvel Field, northern Brazoria County, where a new drilling play was springing up on the north end of the area, as a result of the extension during the past week of the deep Oligocene sand production, which until now has been confined to the south end, by the completion of Bowles and Borsodi's No. 1 Norvell Investment Co. as one of the best wells so far in the field.

Nome Prospect

On the Nome Prospect, northwestern Jefferson County, Sun Oil Co.'s No. 1 Hugh Long, in the John Blair Survey, indicated a possible pool opener by building up considerable gas pressure preparatory to testing, after the operators had set 300 feet of screen at 8,700 feet. The hole is bottomed at a total depth of 9,045 feet, and it was decided to test the well after an electrical coring test was made of the hole, which indicated possibilities of production. If it makes a producer it will establish a new producing depth for the Texas Gulf Coast.

The Nome area has been known geophysical prospect for some time, and several dry holes have been completed in the area, the two deepest tests being Sun Oil Co.'s No. 1 Paggi, located approximately a mile southeast in the J. W. Kirby Survey, which was abandoned at 7,277 feet. A showing of oil and gas was encountered in this test at 6,031 feet. Due south, Texas Co. abandoned its No. 1 Burt and Caswell at 6,402 feet.

Manvel Field

Bowles and Borsodi's No. 1 Norvell Investment Co., one-quarter mile north of production in the Manvel Field, Brazoria County, drilled the plug the first part of the week and was completed for an initial production of 48 bbls. per hour through a twelve-sixty-fourths-inch choke. Late in the week it was making 18 bbls. per hour flowing through a one-quarter-inch choke, with tubing pressure 700 pounds and casing pressure 800 pounds. Gravity of the oil is 29 degrees. It is producing from 13 feet of sand topped at 5,617 feet and bottomed at 5,630 feet. Seven-inch casing was cemented at 5,614 feet.

The completion of this test is most important, and is leading up to an extensive development program, which is now getting under way. The well is considerably higher than the producers in the south end of the field, and for this reasons the producing limit of the field is expected to extend much farther to the north. The operators of the discovery well are reported to have made three new locations on their 70-acre lease, "farmed" out to them by Pure Oil Co. for a half interest in the lease.

On the south end of the field two abandonments and one producer were reported. Texas Co.'s No. 1 Dolmolin, in the Charles O'Donnell Survey No. 74, was abandoned at a total depth of 5,279 feet. The same company's No. 2 O. L. Rash, in the Thomas Spraggins Survey, drilled to a total depth of 4,602 feet and was abandoned. The company's No. 1 Helene J. Wray cemented 7-inch casing at 5,688 feet and was completed for an initial production of 458 bbls., with tubing pressure 540 pounds and casing pressure 520 pounds. Total depth is 5,704 feet. Due north in Lot 11, A.C.H.&B. Survey, the Texas Co.'s No. 13 Houston Oil Field Association found the Oligocene productive, and was completed at a total depth of 4,050 feet for a gas well. Seven-inch casing was cemented at 3,968 feet.

Aldine Prospect

Another failure was marked up for the Aldine Prospect, Harris County, when American Liberty Oil Co.'s No. 1 Graves, in the J. W. Bryan Survey, was abandoned in salt water sand at a total depth of 6,626 feet. On a drill stem test from 6,445-70 feet it tested 5 thribbles of drilling mud and 12 thribbles of salt water through a one-quarter-inch choke on top and bottom. In the last core from 6,610-26 feet it is reported that a good showing of oil was encountered with the salt water. This is the third dry hole to be completed on the prospect by the company, both being located south and southwest of the above test. No. 1 Graves was abandoned in the Cockfield sand topped at 6,240 feet. In the western part of the county the wildcat test of Goldston and others' No. 1 Weingarten, Section 39, H.&T.C. Survey, is drilling shale below 4,195 feet. In the Red Bluff area, southeastern part of the county, Red Bluff Oil Corp.'s No. 1 E. P. Seaureau, in the W. P. Harris Survey, is drilling in shale and shells at 5,370 feet. It is reported that Hill & Hill, Inc., will start a wildcat test, to be located 3 miles west of Fairbanks in Section 5, W.C.R.R. Sur. Several dry holes have been completed on the block, and the above test is to be located approximately 1 mile northwest of W. B. Hamilton's No. 1 Hargrave, which was abandoned at 6,946 feet. It is reported that the test will be carried to 7,200 feet.

Hastings Area

In the Hastings area, northeastern Brazoria County, the discovery well of Stanolind Oil & Gas Co.'s No. 1 J. W. Surface, has been deepened from its old total depth of 5,990 feet to 6,003 feet, and the operators are preparing to drill plug after 7-inch casing had been cemented at 5,982½ feet. Two thousand feet east of the discovery well the company is drilling in shale below 1,080 feet in its No. 1 W. J. Miller. Twenty-inch casing was cemented at 38 feet.

Splendora Area

The Splendora area, Montgomery County, received its third test to be drilled in the area, when the Humble Oil & Refining Co. agreed to give Bryce McCandless and Others 100 acres out of their western 2,000-acre lease in the Walker County School Land Survey for the drilling of a Cockfield test. Location for the test if 466 feet south and west from the northwest corner of Block 8. It will offset Block 8 of Steen Drilling Co. subdivision to the west and is 8,500 feet west of Steen Drilling Co.'s No. 1 Texas Long Leaf Lumber Co., the discovery well. The other active test in the area is R. R. Frankel, trustee's No. 1 Cora Neff, in the Walker County School Land Survey, which is coring in shale below 5,810 feet. It topped the Operculina from 5,765-70 feet.

Waller County

In the southwestern part of Waller County, Stanolind Oil & Gas Co.'s No. 1 J. W. Thorp, a wildcat in the J. M. Bennett Survey No. 100, is coring in shale below 7,276 feet. It cored sand from 7,100-32 feet which had an odor of gas in the last 10 inches of the core. This test is being drilled on a unitized block comprising four sections, which includes the H.&T.C. Survey 99, J. M. Bennett Survey 100, H.&T.C. Survey 109 and the T. S. Ruse Survey. Stanolind Oil & Gas Co., Amerada Petroleum Corp., Humble Oil & Refining Co., Sinclair Prairie Oil Co., Tide Water Oil Co. and Darby Petroleum Co. all own an interest in the unitized block. Southwest of the above test, on the southeast flank of the San Felipe Dome, Texas Co. abandoned its No. 1 J. H. Jones at 5,017 feet, after it had encountered considerable salt water at that depth. Location is in the William Cooper Survey.

Montgomery County

Southwest of the town of Willis, Montgomery County, R. E. Watson has assembled approximately 4,000 acres of a drilling block, which was given for a well to be drilled to the Cockfield sand, and is to be spudded by February 15. The block centers around the J. I. Foster, Neil Martin, Timothy Cude and Elijah Collard Surveys. East of the town of Ace, location for West Production Co.'s No. 1 Winnie D. Johnson, which was reported last week as a proposed test, has been announced. It is located 330 feet due east of the southeast corner of the Winnie D. Johnson 53.75-acre tract in the S. C. Hiram Survey. The Atlantic Oil & Producing Co. is reported to have an interest in the well. It is also reported that after the completion of the above test, West Production Co. is to start a well on the Kirby Lumber Co. and West Lumber Co.'s 200 acres. It is to be started within 90 days after the completion of the first test.

A recent survey of the salt water wells in the Conroe Field, Montgomery County, as of January 2, showed a total of 51 wells making a daily average of 920 bbls. of salt water per day. Thirty-seven of these wells are producing from the Conroe sand, making a daily average of 623 bbls. daily, and 14 which are producing from the Upper Cockfield sand, are making a daily average of 300 bbls. With a total of 829 producers completed in the field, the total number of wells making salt water is considered rather small.

Kittrell Field

In the Kittrell Field, south Houston County, Killough and Tucker are building derrick for their No. 1 L. W. Huffman, 10 feet southwest and 10 feet northwest of the most southerly corner of Humble Oil & Refining Co.'s Shaw lease, in the Charles McEllis Survey. The well is located on a 20-foot excess strip between the Huffman and Shaw tracts. Eight miles northeast of the field and 1 mile north of Lovelady in the LaRue Survey, Joe Burnham and others have abandoned their No. 1 Houston-Leon County Coal Co. at a total depth of 2,350 feet. Gulf Production Co., which has had an option on 100,000 acres of Houston County Timber Co. land, made a selection of 7,500 acres adjoining their Kenard block on the south. The consideration was reported to have been $3 per acre, with the majority of the acreage being located in the John Leach Survey, L.&G.N., M. E. Stubblefield, J. W. Stubblefield, Salbrigh, James Perry, all of the John Carlton Survey, the J. S. Carlton, and the John Henley Surveys.

Mykawa Field

In the Mykawa Field, Harris County, Danciger Oil & Refining Co.'s No. 1 Williams, cemented 7-inch casing at 4,810 feet and is waiting on cement to set at a total depth of 4,867 feet. The operators have been unable to test the well due to the cement failing to set. The field received a new location when West Production Co. made location for No. 1 Medelsohm and Ryeman in Block 13 of the F. J. Rothas Survey.

Chambers County

Probably the most important leasing activity going on in the Gulf Coast at the present time is taking place in the upper end of Galveston Bay, Chambers County. The State of Texas, which has offered approximately 57,000 acres of water bed leases for bids, recently awarded Stanolind Oil & Gas Co. 1,000 acres for which the company made a bid. The bid was reported to have been $65

Wildcat Operations on Gulf Coast

Week Ending January 19

RACCOON BEND—AUSTIN COUNTY

Humble O. & R. Co.'s No. 5-X McCasland, 419 ft. SE along NE line, 377 ft. at R.A. from NE line, Wm. C. White Sur.
16-in. 1,160 ft.

Humble O. & R. Co.'s No. 8-X Sanders. S.D. 2,220 ft.

Humble's No. 6-X Wilson, 315 ft. at R/A from NW line, 313 ft. at R/A from NE line.
7-in. csg. 4,060 ft.; T.D. 4,144 ft.

Humble O. & R. Co.'s No. 9 Sherrod.
7-in. csg. 4,059 ft.; R.U. to pump.

Humble O. & R. Co.'s No. 11-X Woodley. Drlg. shale 6,625 ft.

Humble O. & R. Co.'s No. 10 Arthur Marten, 315 ft. from SE and 313 ft. from SW line of lease, Wm. C. White Sur.
Rigging up.

DANBURY—BRAZORIA COUNTY

Shell Pet. Corp.'s No. 7 Blakely-Winston. 63 deg. 11 min. E, 5,540 ft. N, 26 deg 19 min. W, 200 ft. from SW cor. of Blakely-Winston 560-ac. tract. H.T.&B. Sur.
Coring sandy shale 5,935 ft.

Shell Pet. Corp.'s No. 3 Haury, 800 ft. SE of No. 2 in line with No. 2 and No. 1 Blakely-Winston, H.&T.B. Sur. No. 13.
T.D. 7,495 ft.

DAMON MOUND—BRAZORIA COUNTY

Gulf Stream, Inc.'s No. 1 Cave Heirs, 160 ft. from N line and 60 ft. from E line of Lot C, Blk. 50, A. Darst Sur.
S.D. 1,512 ft.

Esco's No. 1-D Wisdom, 25 ft. from S and W lines of Blk. D, Lot 5, A. Darst Sur.
S.D. 1,563 ft.

HASTINGS—BRAZORIA COUNTY

Stanolind O. & G. Co.'s No. 1 W. J. Miller. 466 ft. out of SW cor. of the Miller 3,939-ac. tract, in A.C.H.&B. Sur. No. 2, 2,000 ft. E of discovery well.
Drlg. shale 1,080 ft.

Stanolind O. & G. Co.'s No. 1 Steve Paul. 476 ft. from the E line and 466 ft. from N line of 160-ac. tract, A.C.H.&B. Sur. No. 2, 2,100 ft. S of discovery well.
Prepare to spud.

MANVEL—BRAZORIA COUNTY

Allison & Richey's No. 2 Gulf Coast Home Co., 347 ft. S, 441 ft. W from NE cor. of Lot 38, H.T.&B. Sur. No. 2-B.
Location.

Bowles & Barsodi's No. 1 Norvell Investment Co. in center of Lot 47, H.&T. Sur., No. 23.
T.D. 5,630 ft.; 7-in. csg. at 5,614 ft.; I.P. 28 bbls. per hr.; tubing pressure 700 lbs.; csg. pressure 800 lbs.

Cron & Gracey's No. 1 Gubert, Charles O'Donnell Sur. No. 74.
Drlg. shale 2,879 ft.

J. W. Sorrells' No. 1 Swift, Blk. 21, Abst. 318, H. N. Little Sur.
Derrick.

Texas Co.'s No. 10-A Belcher, N 42 deg. E 330 ft. and N 48 deg. W 330 ft. from S cor. of Belcher "A" lease, H. N. Little Sur.
Rig up.

Texas Co.'s No. 1 J. L. Lemmer, 330 ft. S 48 deg. E and 330 ft. N. 42 deg. E of W

(Continued on Page 82)

per acre cash and $100 per acre in oil. The Gem Oil Co., Salt Dome Oil Co., Sun Oil Co. and various other companies are all active in the area, and some real development is assured this area in the near future.

Cleveland Field

In the Cleveland Field, Liberty County, Black Gold Oil Corp. have reached an interesting depth on its No. 1 McDonald, located west of production and is being watched with considerable interest. Late in the week it was coring in shale below 5,710 feet and should reach the pay horizon of the field, by the middle of the week. This is the first test to be drilled in the field by an independent operator, and if the test is productive, it will cause considerable drilling to be done in the field. It topped the Massilina Pratti at 4,645 feet, the Hockleyensis at 4,735 and the Operculina at 5,579 feet.

Orange County

In the Port Neches Field, Orange County, Texas Co. completed its No. 6 Kuhn in the Mary Hall Survey for an initial production of 28 bbls. per hour through a 5-16-inch choke, with tubing pressure 760 pounds. It is bottomed at 5,939 feet, with 5-inch casing cemented at 5,986 feet. This is the second producer to be completed in the new deep sand, and was discovered in September by the completion of the company's No. 2-B Polk.

Roanoke Field

Humble Oil & Refining Co.'s No. 3 Devilbiss, in the Roanoke Field of Jefferson Davis Parish, which established a new producing depth for the Gulf Coast last week, when it flowed 600 bbls. of fluid, of which 5 per cent was oil and the balance of salt water, with a tubing pressure of 1,400 pounds and casing pressure 1,900 pounds, has been killed and the operators are preparing to pull the screen and liner. It will be plugged back a few feet in attempt to shut off the salt water. The test is located three-quarters of a mile southwest of the discovery well in Section 14-9s-4w. East of the discovery well, Shell Petroleum Corp.'s No. 1 Jarnigan, Section 12-9s-4w, is shut down at 9,764 feet in sand and shale, with no show being encountered.

Two miles west of Vinton, Plummer and McDaniel's No. 1 Coburn-Hood in Calcasieu Parish, is plugging to abandon at a total depth of 7,378 feet. Location is in Section 13-10s-12w.

Five miles northeast of Iowa and 3 miles northwest of the Welch Field, Jefferson Davis Parish, George W. Strake's No. 1 Calcasieu Parish, encountered a fine grained sand, which had a good oil odor and a slight show from 8,080-8,091 feet. While going in to ream the hole, the operators stuck the drill stem at 4,900 feet, and are now fishing. It topped the Discorbie at 7,274 feet and the Marginulina at 7,858 feet. Location is in Section 12-9s-6w.

Deep Wildcat Abandoned

Another deep wildcat was marked off the list when Humble Oil & Refining Co. abandoned its No. 1 Haas, located northwest of Reddell, Evangeline Parish, at a total depth of 8,014 feet. Location is in Section 22-4s-1w. It topped the Discorbis at 4,938 feet, the Heterostegina at 5,016 feet and the Frio at 5,124 feet.

On the Darrow Dome, Ascension Parish, Humble Oil & Refining Co.'s No. 2 Gumble, Section 33-10s-2e, cemented 9⅝-inch casing at 5,693 feet and started flowing by heads approximately 50 per cent oil and the balance fresh water and has with tubing pressure 325 pounds and casing pressure 475 pounds.

In the Bosco Field, Acadia and St. Landry Parishes, two short extensions to the field were registered, by the completion of Superior Oil Producing Co.'s No. 1 Trahan, located northeast of the discovery, and approximately 1,000 feet north of production, in Section 27. It was completed at a total depth of 7,832 feet, for an initial production of 125 bbls. in 21 hours through a seven-sixty-fourths inch choke, with tubing pressure 1,255 pounds. The other extension was made by the completion of No. 1 Prejan, which extends production 1,000 feet south. The operators cemented 7-inch casing at 8,560 feet, and the well made 579 bbls. in 11 hours through a twelve-one hundred-sixty-fourths inch choke, with tubing pressure 1,360 pounds and casing pressure 1,490 pounds. Location is in Section 34. No new locations were reported for the field.

Gillis Area

Two new locations for the Gillis area, Calcasieu Parish, was announced by Union Sulphur Co. Location for No. 4 State is located 2,604 feet south and 2,714 feet east of the NE cor. Section 12-9s-8w, southeast of its No. 3 State, and its No. 5 is located 1,797 feet north and 669 feet east of the SW cor. Section 12-9s-8w. The company's No. 1 Powell Lumber Co. is drilling sticky shale below 5,611 feet and should reach the producing horizon this week. Location is in Section 12-9s-8w.

It is reported that C. B. Bunte, Inc. will drill a 7,000-foot test on the Thistlewaite Lumber Co.'s properties covering the Washington Dome in St. Landry Parish. This will be the first test to be drilled on this dome, since its discovery in 1929 by Pure Oil Co.

Southwest of the Cameron Meadows Field, Cameron Parish, it is reported that Magnolia Petroleum Co. has taken six-year commercial leases, centering around Townships 14-14w, 15-13w and 15s-15w.

Score of Completions in Central Ohio; One Completion in Kentucky Area

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Jan. 21.—The Central Ohio Field reports 21 completions, 6 oil wells, with an initial of 90 bbls., 9 gas wells and 6 dry holes. In the old Lima Field no completions were reported. In the Tiffin Field of Seneca County R. E. Greene is drilling No. 3 on the T. C. and B. G. Schall, Section 30, Liberty Township, and R. C. Jones is drilling No. 1 Henry King farm, Section 31, same township. J. L. Barrett is drilling No. 1 T. N. Einsel farm, Section 1, Hopewell Township, same county.

In Logan County, Logan Coal Products Co. is drilling on the Phil Crow farm, in Washington Township, some distance from production with hopes of opening a new producing area for the Trenton limestone formation. In Van Wert County, Duncan & Smith have abandoned the test on the William McCracken farm, Section 29, Jackson Township. Hystanton Oil & Gas Co. is drilling No. 3 J. A. Reed farm, Section 30, and Elmer Caudill and others are still working on No. 4 Mary B. Sheets farm, Section 30, same township. In Sugar Creek Township, Mid-Continent Oil & Gas Co.'s No. 1 on the Frank Brenneman farm, is reported as a 2-bbl. producer. In Jennings Township, H. C. Miller is drilling No. 4 James P. Davis farm, Section 5.

In Auglaize County, the St. Marys Field, N. E. Master and others are still drilling No. 1 on the George Ruble farm, Section 11, Noble Township. This area still has many fairly good locations for further tests. In Douchouquet Township, same county, C. Wentzer is drilling on his own farm, Section 28, and N. E. Masters is still drilling No. 1 J. W. Wisner farm, Section 35, Hoagland Township. In Salem Township, same county, Wayne & Jones are reported to have a rig up for No. 2 on the A. and M. Rohrbach farm, Section 2.

In Darke County, Adrian Tester has abandoned a test on the C. Brown farm, Section 14, Mississnaw Township. In Butler Township, A. A. Lauber has not completed his well on the J. W. Lange farm, Section 26, and Petro Petroleum Corp. is drilling No. 2 on the C. S. and Vesta Lemoyn farm, Section 35.

In Shelby County Eilerman Oil Co. is drilling a test on the Mrs. H. G. Fisher farm, Section 24, Cynthian Township.

Wyandot County is showing more drilling than any county in the Lima Field. In Crane Township, Strouse and others have a rig on the Fred Meer farm, Section 7. Dempsey and others are drilling No. 1 S. P. Hooper farm, Section 7, same township. Upper Sandusky Oil & Gas Co. is drilling No. 9 on the O. J. Weiker farm, Section 28, and McPheron and others are drilling No. 1 Lydie Geir heirs farm, Section 33, same township. In Pitt Township, McPheron and others are starting No. 1 on the Nevin Cotterman farm, Section 15. Wood Oil Co. is drilling No. 5 Edward Orton farm, Section 22, same township. In Tymochtee Township, Miller and others have a fishing job at 1,475 feet in No. 1 on the L. F. Bogard farm, Section 4, and G. H. Slack has a rig in for No. 2 on the Lawrence Sweline farm, Section 29. In Salem Township, Bosse Brothers have a rig on the Adam Gamber farm, Section 33. Newcomer and others are drilling No. 1 Anna Williams farm, Section 17, Pitt Township.

CENTRAL OHIO

In Medina County, Ohio Fuel Gas Co.'s No. 1 on the Leo A. Hauck farm, Lot 50, Medina Township, is a gas well. In Hinckley Township, same company's No. 1 F. F. Kovar farm, Lot 40, was dry at 3,395 feet. E. R. Edison's No. 3 Sam Hartman farm, Lot 63, Harrisville Township, was also dry. Ohio Fuel Gas Co. is drilling No. 1 Roy W. Allis farm, Lot 38, same township. Edward Obermiller is drilling on the Frank V. Wood farm, Lot 8, Liverpool Township. In Chatham Township, Oko Oil & Gas Co.'s No. 32 T. W. Brinker farm, Lot 6, produced 10 bbls. from the Berea sand at 376 feet. Ohio Fuel Gas Co. has a location on the Clyde L. Rose farm, Guilford Township. Same company has a location on the Glen A. McFarren farm, Lot 7, Homer Township, and is drilling on the J. C. Treman farm, Lot 50, Granger Township, same county.

In Holmes County Lydic Oil & Gas Co.'s No. 1 Gladys McDowell farm, Section 26, Monroe Township, is a gas well in the Berea sand at 962 feet. In Washington Township, Ohio Fuel Gas Co. has a location on the Adeline McKinley farm, Section 27.

In Knox County Upham Gas Co.'s No. 1 James Henwood farm, Section 7, Monroe Township, is a dry hole at 2,549 feet. Read Brothers' No. 4 on the Blanch Reed farm, Section 14, Brown Township, is dry at 962 feet. In Butler Township, the Ohio Fuel Gas Co.'s No. 1 H. H. Scott farm, Section 20, is a gas well at 3,102 feet. Upham Gas Co. is drilling No. 1 Charles E. Wharton farm, in 15-16 fractional section. Same company has a rig for No. 1 on the Milen E. Mizee farm, in fractional Section 11-12.

Coshocton County

In Coshocton County Preston Oil Co. is drilling No. 3 on the C. D. Mossholder farm, in Lots 3 and 4, Newcastle Township, and has a location for No. 1 William Frazee farm, on the same lot. Same company is drilling No. 1 on the Cary D. Harris farm, Section 17, Perry Township.

In Licking County, Preston Oil Co.'s No. 3 Wallace Davidson farm, Section 13, Fallsburg Township, produced 36 bbls. initial at 2,980 feet. In Mary Ann Township, Settles Oil Co.'s No. 4, Oren B. Evans farm, Lot 2, produced 7 bbls. initial at 575 feet.

In Muskingum County, Pure Oil Co. has a rig for No. 3 on the Zonetta Brown farm, Section 6, Jackson Township. Same company is drilling No. 3 on the E. J. Hankins farm, same township. In Brush Creek Township, Fritz Oil & Gas Co.'s No. 1 on the Walter Fletcher farm produced an initial of 15 bbls. at 4,080 feet. Hopewell Oil & Gas Co. is drilling No. 2 on the Albert F. Dozier farm, Section 4, same township. Fritz Oil & Gas Co. is drilling No. 1 J. H. and B. F. Swingle farm, Section 28, same township. In Harrison Township, Fulk & Standberry's No. 1 William W. Baughman farm, Section 21, produced an initial of 20 bbls. at 4,062 feet.

In Athens County, A. D. Townsend's No. 1 J. H. Hartley, fractional Section 17, Lodi Township, is a gas well at 1,660 feet. Ohio Fuel Fas Gas Co. has a location for No. 1 on the L. A. Ruth farm, same township.

In Tuscarawas County, C. A. Hardwick's No. 2 William Couldon farm, Lot 21, Perry Township, was dry at 680 feet.

In Stark County, Plain Township, East Ohio Gas Co. is drilling No. 2 Thomas H. McDowell farm, Section 16, and has a rig for No. 1 R. C. Foster farm, Section 17, same township.

In Guernsey County, Ohio Fuel Gas Co.'s No. 1 A. J. Weisher farm, Section 34, Millwood Township, was dry at 1,509 feet.

In Vinton County, Hazlette & Walters' No. 1 Henry Cecil farm, Section 2, Harrison Township, produced 2 bbls. at 454 feet.

In Meigs County, Rutland Gas Co.'s No. 2 L. M. Haley farm, Section 8, Rutland Township, is a gas well at 800 feet. B. G. Davis & Co.'s No. 2 Effie M. Haley farm, same ifeld, is a gas well at 875 feet. Ohio Fuel Gas Co.'s No. 1 J. J. Ours farm, Section 30, Lebanon Township, is a gas well at 1,932 feet. Same company's No. 2 H. M. Durst farm, Section 24, same township, is a gas well at 2,142 feet. Same company is drilling No. 1 Earl T. Winters farm, Section 36, same township, is drilling. Houston and others are drilling No. 2 Nicholas farm, Section 30, same township.

In Delaware County, Chester Wise is drilling on the Herman D. Vance farm, Section 35, Orange Township, but at present is repairing rig at 2,900 feet.

In Lawrence County, C. C. Wolfe and others have a rig on the Edward Miller farm, Section 28, Rome Township.

INDIANA

No completions were reported from the Indiana Field. In Gibson County, Gilbert Schoulty is drilling No. 1 L. Armstrong farm, in Donation 107-108, Washington Township, and Robert Watson is drilling No. 3 Laura Dillon farm, NW Section 18, same township. George W. Porter is shut down on his No. 1 L. Kohlmeier heirs farm, Section 13, Barton Township. Knox Engineering Corp. is drilling No. 3 H. Erdell farm, Section 23, Columbia Township.

In Pike County, A. E. Daviess is drilling No. 2 on the Frank Armand farm, Section 20, Washington Township; Bruner & Abbott are drilling No. 13 D. M. Shawhan farm, Section 25, Madison Township; and in Lockhart Township H. C. Darby is drilling on the Samuel Deering farm, Section 29.

ILLINOIS

In St. Clair County, Ohio Oil Co. is drilling No. 27 on the Matilda Dryoff farm, Section 27, Sugar Loaf Township. In Monroe County, Maystown Oil Co. is drilling No. 1 Louis Faust farm, Section 32, Mitchie Township. In Crawford County, G. R. Pauley is drilling No. 1 Guy Comley farm, Section 12, Oblong Township. Salvage Oil Co. is drilling No. 1 John Patton farm, Section 2, LaMotte Township, and Karns and others are drilling No. 1 Orlands, Walker farm, Section 24, same township.

KENTUCKY

Only one completion was reported from Kentucky, J. H. Haynes' No. 5 Ellis Hinds farm, Swope Pool, which was dry.

North Louisiana and Arkansas Territory Turns in Only 6 Dry Holes Out of 17 Completions

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Jan. 21.—Three districts in this division turned in a combined total of 17 completions during the last week with an unusually high percentage of 11 oil or gas wells against 6 dry holes. All of the producers were in proven fields and two of the failures were tests of more than ordinary interest. Thirteen new locations were staked in the North Louisiana and Arkansas areas, but the majority of them were within the proven boundaries of the most active fields.

NORTH LOUISIANA

This district came back into the lead in completions with three gas wells, three oil wells and four dry holes, but three of the dry holes can hardly be classed as completed tests as one was abandoned at a shallow depth in known productive territory and two were junked around the testing stage because of casing or drill stem trouble.

The three small producers were in widely scattered areas. In Caddo Parish, Shreveport Oil Corp.'s No. 2-C Muslow, Section 4-20-15, is pumping 30 bbls. daily from 2,155 feet. W. L. Posey's No. 1 Burkett, Section 10-19-13, in the Converse Field of Sabine Parish, is also a 30-bbl. pumper from the chalk rock at 2,011 feet. The Urania Field in LaSalle Parish which has experienced drilling activity during the last few months for the first time in several years, reported the third oil well. J. S. Abercrombie & Co.'s No. 7-A King, Section 25-10-1e, is blowing with air 100 bbls. of oil and 2,000 bbls. of salt water from 1,520 feet.

The best gas well of the week in the North Louisiana district was Woodley Petroleum Co.'s No. 4 Harris, Section 14-17-12, in the Sligo area of Bossier Parish, an old well drilled to a deeper sand. The open initial flow gauged 64,200,000 feet of gas with 1,200 pounds rock pressure from 2,782 feet. The prolific shallow Nacatoch sand in the Blanchard Field, Caddo Parish, listed two more small gassers. M. Segal's No. 4 Sharp, Section 11-18-16, is flowing 1,500,000 feet from 5 feet of sand from 961 feet, and W. T. Boyd's No. 3 Mitchell, Section 6-18-16, is a 500,000-foot gasser from 980 feet.

Wadley Test a Failure

The hottest wildcat to check out as a failure in this district was J. K. Wadley and others' No. 1 W. W. Moreland in Section 2-22-7, Claiborne Parish, about 6 miles southeast of the Haynesville Field. Although the test was checked and logged carefully, there is no report of any show of oil or gas and it was abandoned as dry at a total depth of 3,304 feet. Two DeSoto Parish tests encountered drilling difficulties and were junked while arranging to test. Hester and others' No. 1 Alston, Section 11-11-16, had tested dry at 2,620 feet and the drill stem stuck when preparations were made to deepen. The test was junked and abandoned at that depth and it is not known at this writing whether or not another hole will be started in that vicinity. George Le Grand's No. 1 Vance, Section 34-12-16, set 6-inch at 2,608 feet, had drilled plug and used acid at 2,707 feet. Casing collapsed while bailing to test and the hole was abandoned at the latter depth. On the flank of the Zwolle Field, Dyer and others abandoned their No. 1 B. C. McCollister, Section 24-7-12, at 1,100 feet.

The North Louisiana district is experiencing an unusually dull wildcatting campaign, none of the tests being looked upon as particularly hot, and the number of wildcat tests actively drilling are fewer than at any other period in the last two years. In the northwestern part of Bienville Parish, Century Oil & Drilling Co.'s No. 1 J. Hutton, Section 4-18-7, contacted the Nacatoch at 2,045 feet and is checking as though it might be located on a fair structure. This block of acreage and the well were originally carried as M. V. Duncan and others. Dempsey-Manziel's No. 1 T. D. Thigpen, Section 33-13-13, DeSoto Parish, continues efforts for a shallow producer after the use of acid. The test is reported to have a show of oil and will test with Lufkin unit from 1,745 feet. In Red River Parish, Sterling Oil & Refining Co.'s No. 1 Long Bell Lumber Co., Section 19-13-9, is shut down at 1,104 feet while changing to a heavier rig.

ARKANSAS

The Rainbow Field in Union County had a good week with three producers out of as many completions. S. H. A. Oil Co.'s No. 3 Taylor, Section 10-17-14, was the best well in that area, flowing 1,213 bbls. of clean oil daily through one-eighth inch choke from 3,333 feet. The casing pressure registered 800 pounds and the gravity of the oil was 30.3. The same company's No. 4 Taylor, Section 10-17-14, is flowing 480 bbls. daily through 2½-inch tubing and one-half inch choke from 3,327 feet. The third well in this field, H. L. Hunt, Inc.'s No. 10 J. D. Gregory, Section 10-17-14, penetrated 10 feet of sand and was completed flowing 100 bbls. through 2½-inch tubing from a total depth of 3,330 feet. Two wells in the Rainbow area had practically barren results on test. J. E. Crosbie, Inc.'s No. 1-B W. E. Gregory, Section 15-17-14, tested salt water from 3,498-3,503 feet and is standing temporarily abandoned at the latter depth. An old producing well drilled deeper, Ohio Oil Co.'s No. 1 S. Oliver, Section 7-17-13, swabbed 100 per cent salt water through tubing at 3,335 feet and the hole will be plugged back to 3,088 feet, its original producing depth.

The Miller County Field furnished the fourth producer for the Arkansas district. Ed Donohue's No. 1 Beck, Section 33-15-26, is pumping 250 bbls. daily from 2,923 feet. The discoverers of production in a wildcat west of Camden in Ouachita County encountered a setback with the abandonment of an offset test to the original producer. T. J. Gaughan's No. 1 Cartier, Section 25-13-18, failed to show on test around the discovery depth of 1,369 feet, was deepened to 2,500 feet and abandoned as dry. In Hempstead County, E. L. Austin has moved the rig and abandoned his No. 1 J. W. McWilliams in Section 19-13-23 at a corrected depth of 2,212 feet.

Grand Prairie Realty Co.'s No. 1 Fischer, Section 6-6s-4w, Arkansas County, has cemented the bottom of the hole to cut off water and will test a reported 7 feet of sand showing oil at a total depth of 1,724 feet. A Calhoun County wildcat, P. J. McMurray's No. 2 Calion Lumber Co., Section 33-15-14, is reaming to bottom at 3,196 feet.

MISSISSIPPI

One good gas well in the Hinds County area of the Jackson Field was the only completion reported in this district during the last two weeks. Atkins & Hightower's No. 2 Sanders, Section 30-6n-2e, gauged 13,500,000 feet of gas from 2,439 feet.

Reports are persistent that Pelican Oil & Gasoline Co.'s No. 1 Martin & Bender, Section 11-12n-8w, Issequena County, has encountered a good show of gas or oil. The test set 6⅝-inch casing in chalk rock at 3,100 feet two weeks ago and since that time has been shut down curing titles with the total depth at 3,227 feet.

ALABAMA

Two wildcats recently started in Alabama are making good progress. In Conecuh County, Ray L. Easterbrook and others' No. 1 T. R. Miller Land Co., Section 1-4n-12e, is arranging to set casing at 1,006 feet. There is no information at this writing as to whether the pipe is being run to test a show or to facilitate drilling. The Geometer Production Corp.'s No. 1 A. B. Culbreath, Section 8-2n-14e, Covington County, is temporarily shut down at 1,000 feet. This company has staked a location recently in Walton County, Florida, known as its No. 1 Walton Land & Timber Co., in Section 10-1s-19w.

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

BIENVILLE PARISH

M. V. Duncan et al's No. 1 Hutton, 400 ft. S, 330 ft. E. NW cor. Sec. 4-18-7.
Drlg. 2,038 ft.

Saline Drlg. Co.'s No. 1 Pardee, Sec. 27-14-6.
S.D. 2,670 ft.

BOSSIER PARISH

Howard & Baird's No. 1 Gold, 150 ft. S and E. NW cor. Sec. 36-20-13.
S.D. 1,126 ft.

W. A. Kirkland's No. 1 Jarrett & McKeller, 330 ft. N and W, S cor. NW NW Sec. 3-21-13.
Set 10-in. 43 ft.

Leonard Co.'s No. 1 Pearson, 250 ft. S and E, of C Sec. 22-21-14.
S.D. for fuel 2,408 ft.

Scott & Howard's No. 1 Sherrill, Sec. 13-19-12.
Partly rigged up and S.D.

R. L. Skidmore et al's No. 1 Davis, Sec. 12-18-13.
S.D. 1,015 ft.

CADDO PARISH

W. T. Bell et al's No. 1 Bostick, 1,320 ft. E. 660 ft. N, SW cor. Sec. 12-22-16.
S.D. 2,540 ft.

Burkett O. & G. Co.'s No. 1 Lindholm, 460 ft. S and E. NW cor. NE SE Sec. 16-17-14.
S.D. 1,046 ft., repairing rig.

A. D. King, tr.'s No. 1 Roach, 641 ft. E, 875 ft. N, SW cor. SE Sec. 4-14-16.
S.D. 2,128 ft.

M. Rodgers' No. 4 Muslow, 1,495 ft. S, 1,270 ft. W, C Sec. 4-20-15.
W.O.S.R. 2,145 ft.

Shreveport Oil Corp.'s No. 2-C Muslow, 1,106 ft. E. 280 ft. N, SW cor. NW Sec. 4-20-15.
Comp.; pumping 30 bbls., 2,155 ft.

Shreveport Oil Corp.'s No. 4-C Muslow, 1,720 ft. E. 100 ft. N, SW cor. Sec. 4-20-15.
Drlg. 1,504 ft.

Leonard Co.'s No. 4 S. P. Harrell, 220 ft. N and W, SE cor. NW SW Sec. 2-21-16.
Set 5 3/16-in., 1,070 ft.

Tooke & Reynolds' No. 1 Levy, 330 ft. N and W, SE cor. NE Sec. 16-20-15.
Drlg. plug 2,197 ft.

Tooke & Reynolds' No. 2 Levy, 300 ft. S and E. NW cor. SE NE Sec. 16-20-15.
Derrick pattern.

J. I. Roberts Drlg. Co.'s No. 1 Lane & Simon, 480 ft. E, 150 ft. S, NW cor. SW Sec. 15-20-15.
Arranging to test, 2,200 ft.

Press & Lambert's No. 1 Lane & Simon, 166 ft. S, 1,134 ft. E, NW cor, SW Sec. 15-20-15.
Set 7-in. 2,165 ft.; T.D. 2,196 ft.

CATAHOULA PARISH

T. R. Hincy's No. 1 La. Central Lbr. Co., Sec. 32-9-6e.
S.D. for D.S. 1,541 ft.

CLAIBORNE PARISH

J. K. Wadley et al's No. 1 Moreland, 330 ft. N and E, SW cor. SE NE Sec. 2-22-7.
Dry and abd. 3,304 ft.

DESOTO PARISH

Bayou Pierre Oil Co.'s No. 1 B. Y. Wemple, C SE NE SW Sec. 14-12-11.
W.O.S.R. 2,731 ft.

Century O. & Drlg. Co.'s No. 1 Morton, 300 ft. N and E SW cor. SE NE Sec. 27-11-14.
S.D. 2,612 ft.

Dempsey & Manziel's No. 1 Thigpen, 275 ft. S, 330 ft. W, NE cor. SW NE Sec. 33-13-13.
Testing 1,745 ft.

DeSoto Pet. Co.'s No. 1 B. Y. Wemple, C S½ SE NE SW Sec. 14-12-11.
S.D. 2,073 ft.

E. L. Foster's No. 1 Youngblood, Sec. 9-11-14.
S.D. 1,830 ft.

Bailey Gaunce's No. 2 B. F. Jenkins, Sec. 35-13-12; O.W.D.D.
Drlg. 2,560 ft.

Hester et al's No. 1 Alston, 330 ft. S and W of center of Sec. 11-11-16.
Junked and abd. 2,620 ft.

George Le Grande's No. 1 Vance 180 ft. N and W SE cor. SW Sec. 34-12-16.
Junked and abd. 2,707 ft.

Leslie Prod. Co.'s No. 1 Ramsey, 150 ft. N and W of C Sec. 36-11-11.
Rigging up.

Ben F. Smith's No. 1 Bonds, 200 ft. E, 500 ft. N, SW cor. Sec. 23-12-11.
Arranging to test 2,749 ft.

National Oils, Inc.'s No. 1 B. Y. Wemple, NW SW Sec. 14-12-11.
S.D. 120 ft.

EAST CARROLL PARISH

Century Oil & Drlg. Co.'s No. 1 Olive Dell, 660 ft. S, 300 ft. W, NE cor. Sec. 56-21-21e.
S.D. 150 ft.

LA SALLE PARISH

J. B. Collins, tr.'s No. 2 Urania, Sec. 7-10-2e.
Set 10-in. 62 ft.; drlg. 1,100 ft.

Fred Graham's No. 1 Urania, 300 ft. N, 150 ft. E, SW cor. SW NW Sec. 13-10-2e.
Set 6-in. 1,508 ft.

F. A. Trichello's No. 1 Urania, Sec. 3-9-1e.
S.D. 1,491 ft.

NATCHITOCHES PARISH

Clyde Crichton's No. 1 Friedman Est., 406 ft. N, 428 ft. E, SW cor. Sec. 52-7-6.
S.D. 2,095 ft.

Jack Lent's No. 1 Brown Lbr. Co., 400 ft. S, 300 ft. E, NW cor. NE SW Sec. 27-9-13.
T.A. 2,470 ft.; old T.D. 2,002 ft.

Missouri Drlg. Co.'s No. 1 Brown Lbr. Co., 400 ft. N, 330 ft. W, SE cor. Sec. 5-10-10.
S.D. 1,925 ft.

Roy A. Raines et al's No. 1 Raines est., 330 ft. N and E, SW cor. Sec. 8-9-10.
S.D. 3,150 ft.

OUACHITA PARISH

Hatcher & Evans' No. 11 fee, 2,065 ft. S, 3,394 ft. E, NW cor. Sec. 17, in Sec. 41-19-4e.
Rigging up.

RAPIDES PARISH

C. D. Loe, trustee's No. 1 Baird Est., SE cor. Sec. 40-5n-1w.
Rigged up and S.D.

RED RIVER PARISH

Sterling O. & R. Co.'s No. 1 Long Bell, 150 ft. N and W, SE cor. NE SE Sec. 19-13-9.
S.D.; changing rigs, 1,104 ft.

Windsor Oil Co.'s No. 3 Jenkins, 1,905 ft. E, 660 ft. N, SW cor. Sec. 11-12-11.
Bailing to test 2,787 ft.

SABINE PARISH

H. J. Brothers et al's No. 1 Edwards, 300 ft. S and W, NE cor. SW NW Sec. 29-9-13.
Pumped off; S.D.; W.O. 1,887 ft.

R. B. Campbell et al's No. 1 Cook Land Co., 150 ft. N, 300 ft. W, SE cor. NW NW S.D. 2,130 ft.

(Continued on Page 84)

NORTH LOUISIANA

	Bbls.
Bellevue	540
Caddo, light	4,870
Caddo, heavy	1,725
Converse	1,235
Cotton Valley	485
DeSoto and Red River	1,460
Elm Grove	245
Haynesville	3,690
Holly	175
Homer	2,460
Pleasant Hill	190
Sarepta-Carterville	570
Urania	3,250
Zwolle	2,305
Total	23,490

SOUTH ARKANSAS

Champagnolle	1,120
El Dorado	2,240
Lisbon	340
Miller County	1,790
Nevada	935
Smackover, light	2,285
Smackover, heavy	18,380
Stephens	590
Urbana	2,260
Total	31,930

Initial Well Records Broken Daily in Fitts Pool; Potential Tests Are Showing Rich Production

By JAMES McINTYRE

Potential tests in Class C pools in Oklahoma kept production up another week, the average daily output for the week ending January 19 having been 498,295 bbls., while the allowable production is only 489,300 bbls.

Pontotoc County

Each new day seems to bring into existence a new gusher in the Fitts Pool, Pontotoc County, and the stimulus is gaining in momentum as each new producer tries to outdo the others.

The Carter Oil Co.'s No. 3 Craddock, SW SE NE Section 25-2-6 was washed in Saturday starting off at 1,043 bbls. of oil in 55 minutes. It was bottomed in McLish lime at 4,325 feet. It was the largest initial producer up to the end of the week. A few days before Blackstock and other's No. 3 Craddock "B" NW NE SE Section 25-2-6, flowed 958 bbls. of oil through casing the first hour and 448 barrels of oil in the next 30 minutes. Bromide sand was logged at 4,170-90 feet for the first sand and at 4,240-90 feet for the second sand with the total depth of the well at 4,297 feet in McLish lime.

No. 3 Craddock held the record only one day. On Sunday, Carter Oil Co.'s No. 4 Craddock, NE SE NE Section 25-2-6, had the pay at 4,355-70 feet and the well flowed 1,065 bbls. in 55 minutes or at the rate of 27,878 bbls. per day. No. 5 Craddock was closed for completion.

Magnolia Petroleum Co.'s No. 4 Tom Norris, SE SW NE Section 25-2-6, getting first Bromide sand 4,265-90 feet and second sand at 4,292-4308 feet, flowed 994 bbls. of oil the first hour and 17 minutes through casing, and flowed 115 barrels of oil in 30 minutes through 2½-inch tubing accompanied with an estimated 8,000,000 cubic feet of gas. It was completed.

Apparently not on the structure and therefore with little chance of getting production, Fleetborn Drilling Co. has abandoned location for its No. 1 Jackson, SE SW Section 19-2-7, a little north and east of the Fitts Pool in Pontotoc County.

The Carter Oil Co. in its No. 1 Craddock completed its No. 2 Hardin, NW NE SW Section 30-2-7 for 1,382 bbls. of oil in three hours. The gauge was taken through the casing and production was coming from sand topped at 4,085 feet. Total depth was 4,215 feet, 15 feet in the McLish lime.

For the second consecutive week all the new operations in Pontotoc County were in the Fitts Pool with the list following: Magnolia Petroleum Co.'s No. 6 T. Norris, SW NE Section 25-2-6, location; Ed. Moore and others' No. 1-A Showers, twin to a gas well in the NW SW NW Section 29-2-7, building rig; same operators' No. 2 Showers; SW NW Section 29-2-7, location; Ed. Moore and others' No. 5 Wirick, NW SW Section 29-2-7, location; Stanolind Oil & Gas Co.'s No. 8 Hardin, NE SW SW Section 30-2-7, location; same company's No. 9 Hardin, SE SW SW Section 30-2-7.

Fitts' Big Potential

Potentials were taken at 14 Fitts Pool wells late last week the tests being made on three days, five wells each on two days and four wells on the third day and the total potential of the 14 wells including two small wells, was 46,396 bbls. or an average of 3,314 bbls. per well. Twelve of the wells averaged about 3,820 bbls. per well. The largest well of the 14, potentially, was the Carter Oil Co.'s No. 1 Cradduck, 5,436 bbls. The results of the tests follow::

January 16

Operator, well—	New potential (Barrels)
H. L. Blackstock No. 2 Harden	3,864
Carter Oil Co., No. 1 Cradduck	5,436
J. E. Crosbie, No. 2 Harden	3,045
Stanolind, No. 1 Harden	4,229

January 17

Carter, No. 3 Harden	3,233
J. E. Crosbie, No. 3 Harden	4,395
Louall, No. 2 Cradduck	302
Magnolia, No. 3 Norris	4,835
E. H. Moore, No. 5 Wirick	2,374

January 18

Deep Rock, No. 1 Harden	4,112
Magnolia, No. 1 Cradduck	360
Magnolia, No. 2 Cradduck	2,234
E. H. Moore, No. 1 Woodruff	3,016
Stanolind, No. 1 Norris	5,061

The above wells were, and all wells to be potentialized, will be shut in for 24 hours, the bottom hole pressure taken, and the well flowed for six hours through 2½-inch tubing. The last four hours' flow is multiplied by six to get the potential.

Osage County

In the Almeda Pool, Osage County, F. O. Aikin completed his No. 2, SE NE Section 18-26-12, getting 3 bbls. of oil on the pump after shooting sand 874-94 feet, total depth, with 110 quarts.

A definite boundary between the South Burbank Pool and the old Fairfax Pool was established in part with the abandoning of A. H. Kasishke's No. 3, NE SE NW Section 21-25-6. Bartlesville sand 2,850-90 feet, showed nothing but water and a very small show of oil was had in the chat formation topped at 2,954 feet. Total depth was 2,890 feet.

The Texas Company got a 14-bbl. well in its No. 1 Harrison, NE SE Section 29-25-8, West Pawhuska Pool. Chat was shot from 2,518-30 feet, total depth. It was a completion.

Just east of the Dalton Pool, H. S. Barritt and others finally completed No. 1 Rowe, C N half N half SW Section 4-24-8, in Hominy sand 2,785-91 feet for 55 bbls. daily on the swab. The well found Siliceous lime 2,831-62 feet, total depth, to be dry and it was plugged back to the Hominy sand.

Western American Oil Co.'s No. 20, SW NW SW Section 4-24-10, was completed in the big lime at 1,470-94 feet, total depth, for 12 bbls. of oil a day on the pump. The lime was acidized with 1,000 gallons.

Phillips Petroleum Co. had abandoned its No. 6, SW NE NE Section 7-24-10, northeast of the Wynona Pool, at a total depth of 2,355 feet, 37 feet in Siliceous lime.

In the Manion Pool, The Finance Oil Co. got a nice well in its No. 1, C W half E half SW Section 19-23-9. An old well deepened to the Siliceous lime logged at 2,478-80 feet, total depth, which put 250 bbls. of oil in the tank in 24 hours. It was completed.

Sinclair Prairie Oil & Gas Co. and Norbala Oil Co.'s No. 1, SW SE NW Section 4-22-9, Sunset Pool, was abandoned at 1,838 feet. Pipe trouble was the cause of the well being abandoned.

Norbla Oil Co. & Indian Territory Illuminating Oil Co.'s No. 2, SE NE SW Section 30-22-9, Osage City Pool, failed to respond when sand 532-51 feet, total depth, was shot with 40 quarts and it was abandoned.

Barnsdall Oil Co.'s No. 11, SW SE NW Section 30-21-9, Osage City Pool, was abandoned at 340 feet.

W. C. Elliott's No. 1-A, NE SE SW Section 10-21-12, Bird Creek District, found Bartlesville sand at 1,220-72 feet, total depth, which was good for 12 bbls. daily on the pump after a 60 quart shot. It was a completion.

New operations in Osage County for the week were as follows Peters Petroleum Corp.'s No. 12, SE SW NE NW Section 26-25-9, machine; Finance Oil Corp.'s No. 27, NE SE NW SW Section 19-23-9, location; Barnsdall Oil Corp.'s No. 12, SW NW NW Section 30-21-9, location; Barnsdall Oil Corp⅝'s No. 13, NE SE NW Section 30-21-9, sand 318-27 feet, flowing 4 bbls. of oil per hour; Barnsdall Oil Corp.'s No. 23, SW NW SW NE Section 30-21-9, moving in machine; Murry Ringold No. 8, SE NE NE S W Section 30-21-9, machine; Norbla Oil Co.'s No. 2, NW SW SW Section 27-20-10, machine.

Wildcat Operations in Oklahoma

Week Ending January 19

NORTHERN OKLAHOMA

BECKHAM COUNTY

Fred Coogan et al's No. 1 Shelton, SW cor. Sec. 33-10-25w.
Reaming hole at 318 ft.

CADDO COUNTY

H. W. Lee et al's No. 1 Stacey Ferrell, SW NE NE Sec. 3-6-13w; (2,000-ft. test).
Drlg. 1,230 ft.

Denver Prod. & Ref. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w.
T.D. 11,230 ft.; C.O. to 10,000 ft.; flowing by heads est. 50 bbls. oil in 24 hrs.; agitating with mud pump.

CLEVELAND COUNTY

Sinclair Prairie et al's No. 1 Franklin, SE NW SE Sec. 21-10-2w.
Location.

COAL COUNTY

J. D. Petty Oil Co.s No. 1 McMillan, SW NW NE Sec. 16-1s-8.
Running 6-in. csg. at 1,110 ft.

GARVIN COUNTY

Anderson & Kerr's No. 1 Riley, SE SE NW Sec. 2-4-1w (5,800-ft. test).
Drlg. 2,555 ft.

Charles Carter and W. S. Key, Inc.'s No. 1 Wood, C NW SW SE Sec. 5-4-3e.
Set surface pipe.

National Prod. Co.'s No. 1 Littrell, NE NE NE Sec. 31-2-3w.
Drlg. 1,071 ft.

George L. Pace's No. 1 Smith, SW NE Sec. 35-1-1.
Location.

GRADY COUNTY

Carter Oil Co. and Magnolia Pet. Co.'s No. 1 Harrison C-34, C NW NW Sec. 28-3-5w.
Drlg. 8,726 ft.

GRANT COUNTY

Helmerich & Payne's No. 1 Crouse, C NE SW Sec. 29-25-8w.
Oswego 5,380 ft.; drlg. 5,670 ft.

HUGHES COUNTY

Dandridge & Crane's No. 1 Mead, NW NW NE Sec. 17-5-9.
T.D. 270 ft.; S.D. for pipe.

Freeman et al's No. 1 Kite, NW NW NE Sec. 8-6-10.
Sand 596-98 ft.; show oil; S.D. for pipe.

Turner et al's No. 1 Williams, SW cor. Sec. 35-7-10.
Rig.

KAY COUNTY

Harris & Haun's No. 1 Schuessler, C NW SW Sec. 2-25-2.
Drlg. 1,685 ft.

Bay Oil Co.'s No. 1 Holden, SW SW SE Sec. 14-28-3.
Chat 3,136-73 ft.; swabbed 125 bbls.; P.B. to sand at 2,980-92 ft.; shot with 80 qts.; swabbed 153 bbls.; P.B. to 3,020 ft.; running 5-in. csg.

Lancer Oil Corp.'s No. 1 Hugo, SE NW NW Sec. 22-28-5.
Location.

S. R. McCorkle et al's No. 1 Smith, SW cor. Sec. 6-26-4.
Fishing at 415 ft.

KINGFISHER COUNTY

Black Gold Oil Co.'s No. 1 Cole, C SW NE Sec. 24-18-5w.
Drlg. 4,365 ft.

LINCOLN COUNTY

Tom Bennett et a's No. 1 Bolby, C SE SW Sec. 27-12-2.
Cored 5,065-81 ft.; S.D. for csg.

Derrickson and Reserve Pet. Co.'s No. 1 Law, SE SW NE Sec. 25-14-3.
Rig on ground.

Chester L. Carlock's No. 1 Young, C N½ NW NW Sec. 23-15-5.
Rig.

Sinclair Prairie Oil Co.'s No. 1 Hoyt, NW SW NE Sec. 5-14-3.
Wilcox sand 5,062-71 ft.; flowed 200 bbls. in 24 hrs.; second Wilcox sand 5,106-13 ft.; T.D. wtr.; P.B. to 5,084 ft.; swbd. 80 bbls. oil in 10 hrs.; will not shoot.

Sinclair Prairie Oil Co.'s No. 1 Boland, SW cor. Sec. 25-12-3.
Second Wilcox 5,536-61 ft.; H.F.W.; to test upper sands.

LOGAN COUNTY

Helmerich-Payne et al's No. 1 Sturgis, SE NW Sec. 1-15-2w.
S.D. at 5,350 ft.

Shell Pet. Corp. et al's No. 1 Hirzel, SE SW SW Sec. 7-16-2w.
Coring at 4,190 ft.

Sinclair Prairie Oil Co. et al's No. 1 Dunbar, Sec. 25-16-4w.
Hunton lime 6,410 ft.; drlg. 6,802 ft.

Sinclair Prairie Oil Co. et al's No. 1 School Land, SE cor. Sec. 36-17-1w.
Simpson dense 5,255-60 ft., T.D.; flowing by heads 200 bbls. a day.

Slick-Urschel et al's No. 1 Pennington, C SW NE Sec. 10-16-1w.
Cellar and pits.

J. C. Schaffer et al's No. 1 Watson, C NW NE Sec. 15-15-4w.
Location.

NOBLE COUNTY

Marathon Oil Co.'s No. 1 Gilbert, NE cor. Sec. 24-22-2.
Wilcox sand 4,449 ft.; T.D. 4,480 ft.; set 6-in. csg. 4,472 ft.

OKFUSKEE COUNTY

Amerada Pet. Corp.'s No. 1 Jaynes, NW NW SW Sec. 20-10-10.
Booch sand 2,480 ft.; drlg. 2,775 ft.

Mid-Continent Pet. Corp.'s No. 1 Haney, SW SE NE Sec. 24-12-8.
Gilcrease 3,260 ft.; coring at 3,309 ft.

OKLAHOMA COUNTY

Anderson & Kerr et al's No. 1 Linn, SW NW Sec. 17-14-2w.
Location.

R. Carl Larkin's No. 1 Brobine, NW NW NE Sec. 32-13-5w.
Rig and pits.

J. C. Shaffer et al's No. 1 Bullard, SW cor. Sec. 13-13-2w; (Wilcox test).
Viola 6,285 ft.; drlg. 6,435 ft.

(Continued on Next Page)

Estimated Production

Estimated production by pools in Oklahoma for the week ending January 19 and for the preceding week follows:

	Barrels Jan. 19	Jan. 12
Allen	8,725	8,275
Asher-West Asher	1,525	1,475
Burbank	9,100	9,100
South Burbank	10,000	9,500
Balance of Osage	27,500	27,500
Blackwell	4,750	4,750
Bristow-Slick	9,650	9,650
Crescent	4,600	4,600
Cromwell	4,500	4,500
Cushing-Shamrock	13,300	13,350
Duncan district	4,100	4,100
Chandler district	6,150	6,150
Fish	7,700	6,950
Fitts	3,725	3,350
Gray	1,075	1,775
Graham	3,400	3,400
Healdton	9,200	9,200
Hewitt	4,800	4,800
Holdenville	2,075	2,200
Keokuk	1,475	1,975
Konawa	2,150	1,975
Lucien	8,775	7,150
Marshall-Lovell	1,000	1,000
Oklahoma City	166,120	188,725
Papoose	1,250	1,250
Sasakwa and Townsite	2,475	2,250
Sholem-Alechem	4,100	4,100
Seminole Field:		
Bowlegs	12,050	9,400
Carr City	6,250	5,825
Earlsboro	9,900	9,050
East Earlsboro	9,000	8,825
South Earlsboro	1,150	1,100
Little River	15,200	12,925
East Little River	675	650
Maud	1,550	1,525
Mission	3,125	2,725
Seminole	10,675	10,025
East Seminole	1,100	1,050
Searight	3,525	3,250
Total Seminole	74,200	66,350
St. Louis-Pearson	21,050	23,050
Tatums	6,000	6,300
Tonkawa-Garber-Thomas	6,000	6,050
Wewoka	4,400	4,400
Yale-Jennings	4,825	4,800
Other pools	59,200	59,200
Total Oklahoma	498,295	513,175

Kay County

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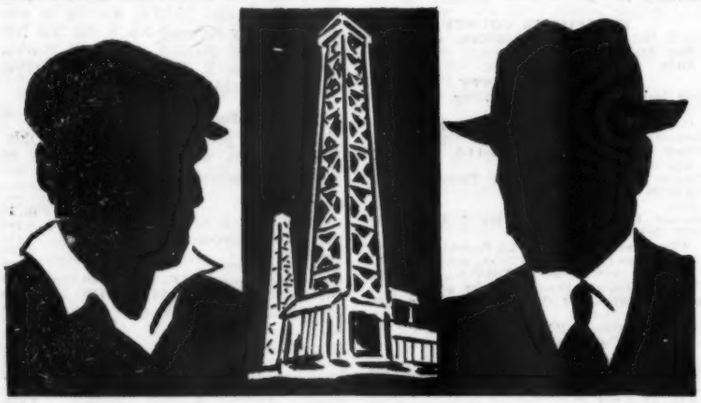

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was moving in material for a well which will offset the recent Skinner sand discovery of the Bay Oil Co.'s No. 1 Hudson in the SW SE Section 14-28-3, Kay County, that did 165 barrels of oil in 24 hours. The Texas Co.'s well, No. 1 Curtis, will be located in the NW NE Section 23-28-3.

Noble County

Potentials taken in the Polo Pool in Township 20-2w, Noble County, on six wells in the fore part of the fiscal week showed an average potential of 1,750 bbls. per day per well. The six wells "potentialed" 10,502 bbls. as follows:

	Bbls.
Stanolind's No. 1 Voss	1,847
Stanolind's No. 2 Voss	1,493
Stanolind's No. 1 DeBord	1,375
Stanolind's No. 2 DeBord	2,243
Sinclair Prairie's No. 2 Smith	1,443
Twin State's No. 1 DeVore	2,101

The Stanolind Oil & Gas Co. and others had driven stake for another test on the Voss farm, discovery tract in the Polo Pool of Noble County, in their No. 6 Voss, NW SE SE Section 28-22-2w.

Approximately one mile southeast of the Lucien Pool of Southwestern Noble County, Stanolind Oil & Gas Co. and others have staked location for their No. 1 Fuller, C SE SW Section 34-20-2w.

Logan County

Almost 10 miles due east of Guthrie Slick-Urschel and others have dug cellar and pits for No. 1 Pennington, C SW NE Section 10-16-1w, Logan County, a communitized wildcat on Seismograph structure. The test is being drilled on Amerada Petroleum Corp.'s acreage and those companies interested in the test are Slick-Urschel, 8/24ths interest; Shell Petroleum Corp., 5/24ths interest; Mid-Continent Petroleum Corp., 4/24ths interest; The Texas Companyy, 3/24ths interest; Phillips Petroleum Co., 2/24ths interest and Gypsy Oil Co., 2/24ths interest.

Lincoln County

Another oil well was recorded for the Gessman Pool in central Lincoln County in the completion of The Texas Co.'s No. 1 Coyle, SW NW Section 34-14-4. Cleveland sand logged at 3,043-57 feet, total depth, put 525 bbls. of oil in tanks in five hours flowing through casing and tubing.

Lincoln County new operations were

Wildcat Operations in Oklahoma

(Continued from Preceding Page)

Springrose Drlg. Co.'s No. 1 Edwards, C SE Sec. 19-11-1.
T.D. 6,540 ft.; P.B. to 5,500 ft.

OSAGE COUNTY

Peters Pet. Co. and Norbla Oil Co.'s No. 1, SW cor. Sec. 15-25-5.
S.D. at 3,134 ft.

PAYNE COUNTY

Marathon Oil Co.'s No. 1 Potts, C SW SW Sec. 27-19-2.
Wilcox sand 4,657 ft.; cored to 4,692 ft.; stained salty sand.

PITTSBURG COUNTY

McAllister Pet. Corp. et al's No. 1 Chunn, C SE NW Sec. 29-4-14.
T.D. 1,530 ft.; pipe collapsed; S.D.
P. H. Gray et al's No. 1 Lee, NW SE Sec. 12-5-12.
S.D. at 615 ft.

PONTOTOC COUNTY

E. M. Blanchard's No. 1 Crabtree, NE SE NE Sec. 27-3-6.
S.D. 2,920 ft.
Dixie Oil Co., Inc.'s No. 1 Graham, SW SE SW Sec. 13-1-7.
Hunton lime 2,490 ft.; coring at 2,507 ft.
Gillett & Kroeger's No. 1 Robbins, NE SE Sec. 31-1-4.
Machine.
Gillette & Kroeger's No. 1 Duver, NW SE Sec. 36-1n-6e.
T.D. 734 ft.; S.D.
H. M. Marcum's No. 1 Magnuson, SW SE SE Sec. 23-2-7.
Sand 1,580-1,601 ft.; flowed 15 bbls. S.W. per hr.; S.D.
J. D. Sledge and Jack Lynch's No. 1-A (twin) Thompson, SW NE SW Sec. 1-1n-7e.
Hunton lime 3,830-4,109 ft.; flowed 60 bbls. oil a day; Viola 4,242 ft.; S.D. at 4,340 ft. with 150 ft. oil in hole; making connections.
Southern Oil Corp.'s No. 1 Ladd, C NW NW Sec. 27-3-7.
Viola 1,394 ft.; S.D. at 2,006 ft. with small show oil.

POTTAWATOMIE COUNTY

Blackgold Pet. Co.'s No. 1 Bizzell, C NE NW Sec. 15-7-3.
Hunton 4,430 ft.; T.D. 4,458 ft.; acidized and swabbed 250 bbls. oil; re-acidized and swabbed 632 bbls. oil in 48 hrs.; comp.

PUSHMATAHA COUNTY

Whitehead Drlg. Co. et al's No. 1 Messer, SE SW SW Sec. 35-3s-18e (O.W.D.D.).
Drlg. 2,825 ft.

SEMINOLE COUNTY

Atlantic Oil Prod. Co. et al's No. 1-A Thompson (community test), SW SE SE Sec. 15-11-3.
Drlg. 3,280 ft.
Ray Dorris and J. T. Hall's No. 1 Dorris, SE SE SW Sec. 31-10-7.
Spudded.
Crabtree Drlg. Co.'s No. 1 Chandler, NE SE SW Sec. 4-5-6.
Spudding.
Harris and Haun's No. 1 Harjo, NE SE NW Sec. 11-6-6; (O.W.P.B.).
P.B. to 2,115 ft.; H.F.W.; S.D.
Gypsy Oil Co.'s No. 1 Grayson, SW NW Sec. 13-6-5.
Simpson dolomite 3,745-3,804 ft.; swabbed 100 bbls. oil in 3 hrs.
Verser & Clay et al's No. 1 Thomas, NE SE NW Sec. 1-6-6.
S.D. at 2,802 ft.
Wofford Drlg. Co. et al's No. 1 Abbott, NE cor. Sec. 33-8-7.
Rig.
Wofford Drlg. Co. et al's No. 1 Thomas, NW SE Sec. 8-6-7.
Drlg. 630 ft.

TEXAS COUNTY (PANHANDLE)

Ben F. Ash et al's No. 1 Guymon Townsite, C NE SE Sec. 30-3n-15e; (Cimarron Meridian).
T.D. 2,420 ft.; fishing for drill pipe.

WASHITA COUNTY

Okla.-Midwestern Oil Co.'s No. 1 Dock, SW cor. Sec. 21-8-18w.
T.D. 2,430 ft.; lost tools in hole; rig rebuilt; S.D.
Anadarko Basin Oil Co.'s No. 1 Wolf, NE SW Sec. 23-9-17w.
Rigged up and S.D.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Brookshire et al's No. 1 Rowland, NW NE NE Sec. 13-3-10.
H.F.W. 3,844 ft.; will abd.
Malernee et al's No. 1 D. O. K. Land Co., C SE SE Sec. 16-2s-13.
S.D. 3,115 ft.

BRYAN COUNTY

C. B. Welch's No. 1 Collins, SW cor. NE NE SE Sec. 19-8s-8e.
Machine.

COMANCHE COUNTY

H. W. Baker's No. 1 Miller, SE SW SE NE Sec. 22-2-13w.
Spudded and S.D.
Henry Rosenthal et al's No. 1 Au-Chi-Re-Ah, NW cor. Sec. 5-1-9w.
Rigging up rotary.
F. F. Stevens' No. 1 Green, SE SW Sec. 2-1-13w.
Drlg. 1,214 ft.
Heiden & Taylor's No. 2 Crutcher, C NE Sec. 11-1n-12w.
S.D. at 860 ft.

JACKSON COUNTY

Associated Oil Co.'s No. 1 Harrell, NE SE Sec. 13-1-21w.
Spudded and S.D.
Burk Royalty Co.'s No. 1 Gore, SE NW SE Sec. 3-1s-20w.
S.D. at 1,909 ft.
Gypsy Oil Co.'s No. 1 Stokes, SE NW SW Sec. 11-1-20w.
Lime 1,709-11 ft.; T.D. 1,722 ft.; S.D.
Petroleum Prod. Co.'s No. 1 Cole, SW SE Sec. 34-2-20w.
Machine.
Selby Oil Co.'s No. 1 Holt, SE SW Sec. 15-2-20w.
Material on ground.
D. Scheig's No. 1 James, NE cor. Sec. 23-1-20w.
Rigging up Star machine.

JEFFERSON COUNTY

Geo. Pace et al's No. 1 Jack, NE NW NW Sec. 10-4s-4w.
T.D. 3,031 ft.; H.F.W.; dry and abd.

JOHNSTON COUNTY

W. A. Delaney et al's No. 1 Diamond, NW NE SE Sec. 5-1s-8.
Hunton lime 1,342 ft.; drlg. 1,455 ft.

MARSHALL COUNTY

Paul Robb's No. 1 Vittetoe, C NE SE Sec. 11-5s-4e.
Drlg. 4,945 ft.

McCURTAIN COUNTY

J. V. Scrivener et al's No. 1, NE SW SW Sec. 34-6s-21.
S.D. 800 ft.

MURRAY COUNTY

Equitable O. & G. Co.'s No. 1 Scott, CSL N½ NW SW Sec. 15-1s-3.
Drlg. 370 ft.
Manahan et al's No. 1 Ward, NE SE NW Sec. 18-1s-3; (Wilcox sand test).
Spudded.
T. E. Revell et al's No. 1 Wolfe, NE cor. Sec. 18-1-2.
Sand 2,658-70 ft.; show of oil; T.D. 2,735 ft.; pulled liner; ran 5-in. csg. to 2,630 ft. and S.D.
C. P. Williams et al's No. 1 Singleterry, SE SW NW Sec. 25-2s-3e.
T.D. 743 ft.; S.D.

STEPHENS COUNTY

Wm. Angle's No. 1 Johnson, NE cor. SE Sec. 17-1n-3w.
T.D. 2,473 ft.; 10,000,000 ft. of gas through 2-in. tubing; sprayed some gasoline; est. at 40,000,000 ft. on open flow.
J. W. Madison's No. 1 Tussey, SW SE NW Sec. 24-1n-4w.
Rig down, drill pipe in hole; T.D. 3,220 ft.

as follows: Magnolia Petroleum Co.'s No. 1 Wilson, SE NE SE Section 33-14-4, location; Shell Petroleum Corp.'s No. 1 Grover, NE SE NW Section 5-14-3, cellar and pits; The Texas Company's No. 2 Coyle, NW SW NW Section 34-14-4, location.

Oklahoma County

The Edmond Pool, Oklahoma County, got two new operations in the past week in the staking of location by Shell Petroleum Corp. in its No. 1 Smith, SW NW Section 32-14-3w and digging of cellar for Mid-Continent Petroleum Corp.'s No. 2 Young, SW NE Section 31-14-3w.

Seminole County

Rogers Oil & Gas Co.'s No. 1 Wellington, SE NE SE Section 18-8-7, about one mile east of the Bowlegs Pool in Seminole County, was dry and abandoned at 3,282 feet, three feet in Cromwell sand topped at 3,279 feet. There were no shows of oil or gas encountered in the test.

Another gusher for the South Fish Pool of Seminole County was had in the completion of Slick-Urschel's No. 3 Reed, SW NW SE Section 31-7-8, which flowed 1,557 bbls. of oil in its six hour potential test. Production is from the Wilcox sand logged at 4,167-95 feet, total length.

Pottawatomie County

Black Gold Petroleum Co.'s No. 1 Bizzell, C NE NW Section 15-7-3, Pottawatomie County, was completed in Hunton lime for 632 bbls. of oil in 48 hours. Lime was topped at 4,430 feet and penetrated to a depth of 4,488 feet, where water was encountered. It was plugged back to 4,458 feet and treated with 1,500 gallons of acid. This well is in a Hunton lime spot and opened up in November, 1929, by the Amerada Petroleum Corp. and others in their No. 1 Vineyard which gauged 421 barrels of oil in 24 hours from Hunton lime a t 4,358-4456 feet.

Vivian Oil Co.'s No. 4 Duvell, NW SE SE Section 4-7-4, St. Louis Pool of Pottawatomie County, was completed in Hunton lime 3,818-4040 feet, total depth, for a rather small well as compared to other wells in the area. It had been treated with 3,000 gallons of acid, shot with 100 quarts and retreated with 1,000 gallons of acid and produced 37 bbls. of oil in 24 hours.

The only new operation in Pottawatomie County to come to our attention during the week was Magnolia Petroleum Co.'s No. 3 Davis, NW NE NE Section 15-7-4, cellar and pits.

Beckham County

In far Western Oklahoma, Shulz & Pois have abandoned their wildcat test, No. 1 Van Vector, NE SE NE Section 25-8-22w, Beckham County, at a total depth of 1,440 feet. An estimated one-quarter million cubic of gas was encountered in granite wash at 1,040-1129 feet.

Jackson County

Jackson County has quite a drilling program under way with 12 operations going on around the vicinity of Altus. A few week's ago The Gypsy Oil Co. opened up a rather shallow producing horizon in a test it drilled in the NE corner of Section 10-1n-20w finding sand around 1,400 feet that was good for 247 bbls. on its initial test. New operations for the past week were: Selby Oil Co.'s No. 1 Holt, SE SW Section 15-2-20w, wildcat location with material on the ground; Petroleum Products Co.'s No. 1 Cole, SW SE Sectoin 34-2-20w, machine; Gypsy Oil Co.'s No. 1 Edwards, SE corner Section 3-1-20w, drilling 25 feet; Whatley & Whatley's No. 1 Holt, NW SW SE Section 20-1-20w, rigging up machine; same operators' No. 1 Hardcastle, NE SW Section 15-1-20w, machine.

Comanche County

Comanche County drew a wildcat test when Henry Rosenthal and others moved in for their No. 1 Au-chi-re-ah, NW corner Section 5-1-9w. Latest reports had them rigging up rotary tools.

Stephens County

Stephens County drew three first reports during the week Heiden & Culberson's No. 1 Woods, NW NE SW Section 12-3S-6w, machine; R. E. Johnson and other's No. 1-A Schick, SW NW NE Section 27-1s-8w, rigging rotary tools; Castle Oil Co.'s No. 1-A Crump, SW SE SE SE Section 10-2s-5w, drilling 810 feet.

Garvin County

A proposed wildcat test for Garvin County was had in the staking of a location by George L. Pace for his No. 1 Smith in the SW NE Section 35-1-1e.

Carter County

Daphfine Oil Co.'s No. 1 Butler, NW Section 13-2s-3w, west of Sholem Alechem Pool in Carter County, was dry and abandoned at 3,520 feet, in brown sandy shale. Oil showings were encountered in sand at 2,591-2,643 feet.

Jefferson County

West of the Old Healdton Pool in Jefferson County, George L. Pace and others got a dry hole in their No. 1 Martin Jack, NE NW NW Section 10-4s-4w, stopping at 3,032 feet, total depth. with a hole full of water. Oil showings were encountered at 241-52 feet, 960-70 feet, 1,804-18 feet with gas showings at 1,510-12 feet and 2,957-63 feet.

Jefferson County drew one new operation during the week, it being O. V. Beck's No. 6 Seay, NW SE NW SE Section 34-6s-5w, ridding up rotary tools.

"Sphinx of 26 Broadway" Model Business Woman

Miss Katharine I. Harrison, of New York, died suddenly at a hotel in Palm Beach, Fla., last week, of cerebral hemorrhage, at the age of 68.

About 30 years ago the New York Times says the financial world recognized Miss Harrison as the woman who "knew all there was to know" about the Standard Oil Co. For about 21 years, until 1909, when Henry H. Rogers, vice president of Standard, died, Miss Harrison served him and the company indefatigably, brilliantly, with a minimum of flourish and a maximum of accomplishment.

She was a pioneer among high-salaried women executives in business. Her title at the beginning, when, fresh from business school, she began work under Mr. Rogers, was stenographer. But soon she became known as his private secretary, a woman, it was said, harder to approach than some of the giants of finance of the day, J. P. Morgan, the Rockefellers and James Stillman.

"Highest salaried woman in business," they called her in the early years of this century. Her salary was said to be at least $10,000 a year and her fortune $1,000,000 or more. She never granted interviews.

She was variously called "the Sphinx of 26 Broadway" and "The Oracle." Secrets remained inviolable with this tall, handsome, grave woman. "Absolute trustworthiness" was the keynote of her business life.

She not only had a keen knowledge of the intricacies of financial America and of the Standard Oil Co. in particular, but she knew well just who should and who should not take up the time of Mr. Rogers himself. If 20 cards were sent to her she knew whom to dismiss without explanation, whom to interview and whom to send in immediately to Mr. Rogers. There was no appeal from her rulings.

They called her "Junoesque" back in 1904-05-06, although she was not unduly heavy. She dressed well but without frills. Her clothes in the office were plainly cut, her shoes were low-heeled and broad-soled. Her eyes were guarded by thick-lensed spectacles mounted on gold rims. They peered calmly, clearly and with keen perception at her callers. She usually found out what she wanted to know about anyone who came into the office.

Shortly after the death of Mr. Rogers she retired from business. She began life in moderate circumstances and attended a business college in Brooklyn in which she was a banner pupil. On leaving the institution she went to work, a young girl, for Standard Oil.

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BOX 5005 - - - DALLAS, TEXAS

Kansas Makes Another High Production Record; Two Siliceous Lime Discoveries in Barton

By JAMES McINTYRE

Two Siliceous lime discoveries in Barton County, about 25 miles apart, were made in the past week, one of the wells starting at 199 bbls. and the other at 596 bbls. and were the features of the week in Kansas.

The eastern limits of Hunton lime production in the Haury-Burrton Pool in Reno County may have been proved by a well in the NE Section 14-23-4w, which showed mostly water.

All production records in the State were broken last week when the average daily crude oil output reached 143,200 bbls.

Estimated Production

Estimated daily average production of Kansas for the week ending January 19 and for the preceding week follows:

	Barrels	
	Jan. 19	Jan. 12
Hollow	6,600	6,875
Ritz-Canton	9,725	9,350
Voshell	5,875	5,500
Johnson	2,334	2,110
Nikkell	6,050	6,100
Sedgwick County	8,950	8,550
Ellsworth County	3,467	3,579
Barton County	1,631	1,163
Rice County	18,968	16,647
Reno County	19,493	16,943
Ellis County	530	524
Kingman County	1,134	920
Stafford County	1,947	1,777
Russell County	7,500	8,275
Greenwood County	11,500	11,500
Butler County	19,000	18,900
Other pools	18,936	19,137
Total Kansas	143,200	137,750

Barton County

Murphin & Downing's No. 1 Lanterman, a wildcat Siliceous lime discovery in Barton County, located in the NW SE Section 15-19-11w, was completed the past week for 199 bbls. on the pump. Siliceous lime drilled from 3,332-55 feet, total depth, had been acidized with 1,000 gallons of acid. Prior to acid treatment it tanked 78 bbls. in five hours on the pump.

Another wildcat Siliceous lime discovery for Barton County which was completed during the week was Darby Petroleum Co.'s No. 1 Jarus, NW SW NE Section 16-16-12w, located on seismograph high. The tools penetrated lime formation from 3,348-51 feet, total depth, which yielded 596 bbls. of oil with a small amount of water on its potential gauge. Oil tested 38.5 degrees gravity.

Suppes, Witt and others had staked location for the No. 1 Hayes, a wildcat in the SW cor. Section 6-16-15w, 8 miles northwest of Galatia in Barton County.

Butler County

The second producer in the extension to the old Keighley area of eastern Butler County was in the offing with the Eldorado Refining Co. and others' No. 2 DeMoss, NW NE NW Section 8-28-7, standing with 1,000 feet of oil in the hole after drilling the Bartlesville sand from 2,650-95 feet, total depth. It will be shot before a pumping test is made. It is one-quarter mile west of the No. 1 DeMoss which came in several months ago for 35 bbls.

Butler County had four new operations to start during the week: Magnolia Petroleum Co.'s No. 9 Anderson, SW NW NW Section 15-27-4, location; Shell Petroleum Corp.'s No. 2 Fisher, SE NE SE Section 15-26-2, an old well being deepened, had top of Wilcox sand at 3,262 feet and was underreaming 5-inch casing at 3,313 feet; Emrich Drilling Co.'s No. 1-A Heorman, SW cor. Section 20-26-3e, rigging up; Vickers Petroleum Co.'s No. 1-A McCranes-"C," C W half NW NW Section 1-25-3, drilling at 405 feet.

Lyon County

In the extreme southwestern corner of Lyon County, Charles Sheedy had deepened his No. 14 Atyeo, NW SE Section 31-21-10, to the Mississippi lime 2,334-93 feet, total depth, which filled the hole with water and the well was abandoned.

Ellsworth County

The Carter Oil Co. and others had a rig up for a wildcat test in the SE NW Section 26-17-9w, Ellsworth County, about 2¼ miles southwest of the Twin Drilling Co.'s recent discovery in the Rolfs Pool. The latter company had rig up for its No. 2 Rolfs, NW SW Section 13-17-9w.

Greenwood County

In Greenwood County, Mohawk Oil Co.'s No. 1-A Ferguson, C SE SW Section 4-27-11, was completed for 100 bbls. a day in lime found from 1,808-16 feet, total depth.

Kite Drilling Co. and others had abandoned their No. 1 Jamison, wildcat test in Greenwood County, located in the SW SE NE Section 30-26-13, at 560 feet.

McPherson County

Shell Petroleum Corp.'s No. 6 Decker, NW SW SE Section 11-19-2w, Ritz Pool in McPherson County, had Viola lime from 3,365-75 feet, total depth, to be good for 10 bbls. of oil on a six-hour swabbing test. It was acidized and production increased to 470 bbls. of oil and 300 bbls. of water in 24 hours.

McPherson County drew four new operations during the week, two being in the Ritz Pool, one in the Johnson Pool and one in the McPherson Pool. The List follows: E. F. Jones and Shell Petroleum Corp.'s No. 3 Flook, an old well drilling deeper in the NE SE NE Section 1-20-2w, drilling at 2,556 feet; Shell Petroleum Corp.'s No. 8 Decker, NW SE Section 11-19-2w, building rig; Dickey Oil Co.'s No. 1 Feldt, SE SW NW Section 13-19-3w, cellar; Mead Brothers and others' No. 1 Chindberg, SE NW SE Section 19-18-2w, rigging up.

Kingman County

Skelly Oil Co. continues to successfully develop the Cunningham Pool, Kingman County, by completing its No. 5 N. Miles, NE SE SE Section 19-27-10w, in the Kansas City lime logged at 3,415-3,505 feet, total depth, which had been acidized to yield 132 bbls. on its initial gauge.

Reno County

From the most prolific producing spot in the State of Kansas today comes word that what might prove to be the east edge of the Burrton-Haury Hunton lime horizon is the test drilled by Olson Oil Co. and Shell Petroleum Corp. in the SE NE Section 14-23-4w, their No. 5 Downie, as it had 500 feet of water in the hole with scarcely any oil showing after drilling Hunton lime from 3,595 feet to 3,602½ feet. It is slightly over a quarter of a mile northeast of Derby Oil Co.'s No. 1 Ackley, the biggest well in the field. Another test serving to define the east boundary of the Hunton section of the field is Olson Oil Co. and Shell Petroleum Corp.'s No. 2 M. E. Sabin, C SW SW Section 13-23-4w, which failed to produce in commercial quantities in the Hunton lime and was plugged back to the Chat and completed for a gasser.

Barnsdall Oil Co.'s No. 6 Sabin-"E," SE NE Section 11-23-4w, was completed for 1,693 bbls. on its potential flow. Pay was Hunton lime drilled from 3,611-21 feet, total depth. It had been treated with 1,000 gallons of acid. The same company's No. 3 Sabin-"C," NE SE Section 11-23-4w, logged Hunton lime from 3,607-20 feet, total depth, which produced 41 bbls. of oil in six hours, flowing natural. It was then treated with acid and produced 1,591 bbls. for its completed gauge. The No. 4 Sabin-"C," NW SW SE Section 11-23-4w, was also completed in Hunton lime, drilling same from 3,561-73 feet. It pumped 596 bbls. of oil in 24 hours. It was then given the usual acid treatment with no increase in production. Additional treatment with acid increased production to 1,221 bbls.

Sinclair Prairie Oil & Gas Co.'s No. 1 Harner, NE SW Section 14-23-4w, found Hunton lime from 3,602-14 feet, total depth, good for 1,878 bbls. natural.

Four new operations were started in the Burrton-Haury Pool during the week: Barnsdall Oil Co.'s No. 9 Sabin-"C," SE NW SE Section 11-23-4w, cellar; Olson Oil Co. and Shell Petroleum Corp.'s No. 6 Downie, NE NW NE Section 14-23-4w, rig; Olson Oil Co. and Shell Petroleum Corp.'s No. 7 Downie, NW NE NE Section 14-23-4w, location, and same operators' No. 8 Downie, NE cor. Section 14-23-4w, rig on ground.

Rice County

On a core drilled and seismographed spot the Gypsy Oil Co. got a real disappointment in its No. 1 Dotson, SW NW Section 25-20-10w, about 2½ miles southeast of the Raymond Pool in Rice County. Siliceous lime at 3,394-3,421 feet was void of oil and the test has been abandoned.

In the Grove Pool of Rice County, Lebow and others had completed their No. 1 Doll, SE SW Section 20-19-9w, in Siliceous lime drilled from 3,233-45 feet, total depth. It was plugged back to 3,240 feet where it swabbed 7 bbls. per hour and then was acidized to produce 349 bbls. for its potential completed gauge.

Shell Petroleum Corp.'s No. 1 Tournear, NW SE Section 29-19-9w, Grove Pool, Rice County, had Siliceous lime 3,204-10 feet, total depth, and it was completed for 1,505 bbls. natural.

Texas Co.'s No. 2 Grove, NE NW NE Section 29-19-9w, found Siliceous lime from 3,197-3,208 feet, total depth, good for 974 bbls. on its completed gauge. The same company's No. 3 Grove, NE cor. Section 29-19-9w, was completed in Siliceous lime logged at 3,205-17 feet, total depth, for 573 bbls. in 24 hours on the pump.

Four new operations were started in Rice County during the week: Sinclair Prairie Oil & Gas Co.'s No. 2 Specht, SE NE SE Section 20-20-10w, building rig; Empire Oil & Refining Co.'s No. 2 Proffitt, NW NE SE Section 6-20-9w, cellar; same company's No. 2 Grove, NE SW NE Section 29-19-9w, location, and Vickers Petroleum Co.'s No. 1 Gouldner, wildcat test in the SE NE NW Section 16-18-9w, cellar.

Russell County

With at least 15 wildcat and semi-wildcat operations under way and almost half a hundred inside pool operations

(Continued on Page 86)

Wildcat Operations in Kansas

Week Ending January 19

(Descriptions are East unless marked otherwise)

BARBER COUNTY

Sam Jarvis et al's No. 1 Morrisse, C SE NE Sec. 23-30-10w.
Rig.

Southern Drlg. Co. et al's No. 1 Davis, 330 ft. from W and 330 ft. from S lines of NE Sec 13-34-15w.
S.D. 2,865 ft.

BARTON COUNTY

D. I. Hall et al's No. 1 Arnold, SE SE SW Sec. 19-18-15w.
Rig.

Murphin and Downing's No. 1 Lanterman, NW SE Sec. 15-19-11w.
Siliceous lime 3,332 ft.; T.D. 3,355 ft.; 1,000 gals. acid; 185 bbls. oil in 16 hrs.; comp.

C. L. Price et al's No. 1 Ehrlich, NW SE Sec. 10-16-13w.
T.D. 340 ft.; fishing.

Suppes & Witt's No. 1 Hayes, SW cor. Sec. 6-16-15w.
Location.

Treleaven & Brimm et al's No. 1 Haas, SW cor. Sec. 30-18-15w.
6-in. 3,325 ft.; C.O.

BUTLER COUNTY

Gaines et al's No. 1-A McKinley, NE NE SE Sec. 19-29-4.
Acidized K.C. lime 1,890-1,950 ft.; flowed 25 bbls. oil, 25 bbls. wtr.; acidized.

CLAY COUNTY

Seidel Bros.' No. 1 Younken, C S½ SE NW Sec. 21-9-4.
Drlg. 1,631 ft.

Severs et al's No. 1 Meyers, NE NW NW Sec. 4-10-4.
Mississippi lime 1,775 ft.; T.D. 1,834 ft.

COWLEY COUNTY

Otstot et al's No. 1 Eckhardt, SE NW Sec. 15-35-6.
Spudded and S.D.

DICKINSON COUNTY

Dutch Oil Co.'s No. 1 Phillips, C NE NW Sec. 15-15-1e.
Drlg. 2,655 ft.

ELK COUNTY

Lassen's No. 1 Ferguson, SE SE SW Sec. 21-30-8.
1,760,000 ft. of gas 2,956-5 8ft.; 5-in. csg. 2,160 ft.; sand 2,169-76 ft.; acidizing.

GREENWOOD COUNTY

Kite et al's No. 1 Jamison, SW SE NE Sec. 30-26-13.
T.D. 560 ft.; dry and abd.

HARVEY COUNTY

O. J. Connell et al's No. 1 Roth, SW cor. Sec. 16-23-2w
Spudded and S.D.

Imo O. & G. Co. et al's No. 1 Sperling, SE NE NE Sec. 23-22-2.
Hunton lime 3,279-3,341 ft.; swbd. 7⅛ bbls. oil per hr.

Wenzel et al's No. 1 Schrag, NW SE Sec. 24-22-3w.
T.D. 587 ft.; S.D. for csg.

McPHERSON COUNTY

Lario O. & G. Co.'s No. 1 Base, SW cor. Sec. 22-20-2w.
Chat 2,981 ft.; standardizing at 2,982 ft.

L. W. Prunty et al's No. 1 Davis, NE cor. Sec. 6-22-1w.
Drlg. 2,311 ft.

Roth-Faurot et al's No. 1 Bestwater, SE SW SE Sec. 23-20-1w.
Viola 3,429 ft.; U.R. 6-in. csg. to 3,469 ft.

Stafford et al's No. 1 Krehbiel, NW NW SE Sec. 27-21-3w; (O.W.D.D.).
C.O. at 2,030 ft.

NESS COUNTY

Texas Co. and Gypsy Oil Co.'s No. 1 Goodman, C SW SW Sec. 21-19-23w.
T.D. 4,355 ft.; fishing.

OSAGE COUNTY

Jim Edwards' No. 1 Detrich, C NW SE Sec. 21-14-15.
Spudded and S.D.

PRATT COUNTY

Atlantic Oil Prod. Co.'s No. 1 Prentice, C SE NW Sec. 18-28-14w.
Drlg. 3,115 ft.

RENO COUNTY

Foraker et al's No. 1 Hiett, SE SW NE Sec. 34-24-4w.
T.D. 1,285 ft.; S.D.

Kessler, Their and Skelly's No. 1 Bigger, NE SE SW Sec. 29-23-4w.
Setting surface pipe.

Privett Drlg. Co.'s No. 1 Crotts, NE NW NE Sec. 27-26-10w.
8-in. 3,212 ft.; S.D. 3,237 ft.

RICE COUNTY

Allison & Fitzwilliams et al's No. 1 Stumps, NW NW SW Sec. 4-18-10w.
Rigging up.

Foraker, Nickerson et al's No. 1 Lyons, SE NW Sec. 27-20-8w.
Drlg. 1,660 ft.

(Continued on Page 82)

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DARLING
GATE VALVES

Seven Michigan Wildcats Nearing Completion; Severe Weather Slows Operations in Field

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., Jan. 21.—Severe winter weather, including the worst sleet storm in two years last week, slowed up operations in Michigan fields where three tests had been drilled into Dundee pay sands and were completing by acid treatment or otherwise, one small completion was reported and 22 tests, including 7 wildcats and 15 in or near proved fields, were nearing completion. Under an increased percentage of proration, daily production has shown an increase of 2,500 to 3,000 bbls. during the past two weeks, shooting the total over the federal allowable.

Ogemaw County, with one completion and four nearing completion in the Dundee, continues to lead in activity, closely rivaled by Isabella and Midland Counties. Four western Michigan wildcats attracted considerable interest as they neared possible production.

Ogemaw County

The lone completion of the week was T. F. Caldwell, Inc.'s No. 2 County Fair Grounds, SW NW SE Section 19-22n-2e, West Branch Township, which made 40 bbls. a day after treatment at a total depth of 2,752 feet. Four other tests neared completion in the same township, two drilling in the Dundee, one completing after drilling in and the fourth with casing set and about to drill in.

William Kerr and associates' No. 1 C. and G. Finnerty, SE NE SE Section 19, and W. J. Sovereign's No. 1 Golf Club, SE SW SW Section 20, were drilling in the Dundee at more than 2,650 feet. M. J. Ingold's No. 1 Hobohm and Wheeler, NE NW NW Section 29, had been drilled to 2,744 feet and was completing. Theodore Oil Co.'s No. 1 Ogemaw Country Club, a former upper Traverse producer, set casing on top of the Dundee and was preparing to drill in.

Isabella County

Morris Oil & Gas Corp.'s No. 1 F. and K. Epple, SE NE SE Section 19-15n-3w, Denver Township, Isabella County, which was first drilled into the Dundee last November, was plugged back and treated with acid when it filled about 800 feet with oil. It was being placed on the pump. Dundee was topped at 3,615 feet and the hole drilled to 3,659 feet. Wittmer Co.'s No. 1 Malcolm McCloud, W W SE Section 12-15n-4w, Isabella Township, filled with oil after being drilled to 3,692 feet, topping Dundee limestone at 3,650 feet and striking pay sands from 3,688-91 feet. Eight other Isabella County tests in four townships were nearing possible production.

McClanahan Oil Co.'s No. 1 B. Wonsey, in Section 33, was completing after a show of oil and gas in the Dundee the previous week. Mammoth Petroleum Corp.'s No. 1 B. E. Johnston, NE E NW Section 33, was drilling below 3,200 feet and expecting to reach the Dundee this week. Gordon Oil Co.'s No. 1 John Demski, SW NW SE Section 28, was shut down at 3,628 feet. Wittmer Co.'s No. 1 Durl Phillips, C W NE NW Section 13-15n-4w, Isabella Township, was fishing at 3,500 feet, not far above the Dundee.

Stewart-Atha interests' No. 1 John A. McDonald, C NW SE Section 25-16n-4w, Vernon Township, was drilling at about 1,150 feet and expected to test the Michigan gas sands soon. Old Dutch Oil & Gas Co.'s No. 2 Michael McGuire, C SW SW Section 36, was still shut down at about 1,200 feet, but expected to resume drilling to test the Michigan gas sands. Arbaugh Brothers' No. 1 Ray Aldrich, C NE SE Section 22-14n-6w, Broomfield Township, cemented at 1,047 feet to help clean up a fishing job before drilling into the Michigan gas sands.

Midland County

Rex Oil & Gas Co.'s No. 1 Frank Howland, NW SW NW Section 23-13n-1w, Porter Township extension well drilled into the Dundee the previous week, was estimated good for 20 bbls. an hour with treatment scheduled this week. Two other Porter tests were nearing the Dundee: Carter Lease, Inc.'s No. 5 William Maywood, SE NE SW Section 18, and Pure Oil Co.'s No. 13 Mina Narmore, SE SW SW Section 15, both drilling at 3,300 feet or more.

Mon-Mar Oil Corp.'s No. 1 Emmett Scott, SE SW NE Section 8-14n-2w, Greendale Township, was completing in the Dundee. John Martin's No. 1 R. Greene, NE NE NE Section 13-13n-2w, Jasper Township, was shut down at 3,400 feet. Howard F. Patterson's No. 1 David Haskins, NW NW SW Section 26-13n-2e, Ingersoll Township, Midland County, a wildcat, was plugged and abandoned at 3,395 feet. It was dry in the Dundee topped at 3,502 feet.

Montcalm County

J. W. Leonard and others' No. 1 Otto and Gildie Durbin, NW NW NE Section 11-10n-5w, Crystal Township, Montcalm County, was drilling at 1,300 feet after a light show of gas at 1,021 feet. It will be carried to the Traverse or Dundee. J. E. DuVall's No. 1 Mrs. Henry Eichenroch, NE NE NW Section 13-11n-10w, Pierson Township, same county, was still fishing at 1,235 feet, not far above the Michigan Stray.

Western Michigan

Dragoon Development Co.'s No. 1 W. K. Young, SE NW NW Section 15-17n-15w, Logan Township, Mason County, was shut down for repairs with 1,600 feet of hole. It is expected to drill into the upper Traverse at about 1,900 feet within a few days. Fischer-Robbins' No. 1 fee, NE SW Section 14-24n-16w, Arcadia Township, Manistee County, was nearing the Dundee after a show of oil and gas in the lower Traverse at 1,088 feet. Bear Creek Oil & Gas Co.'s No. 1 John Fors, NE NE SE Section 29-3n-14w, Heath Township, Allegan County, struck shale believed just above the Dundee and prepared to run casing before drilling in.

New Locations

Seven new state permits to drill on two locations in Ogemaw County, two in Isabella County, two in Mecosta and one in Muskegon County were issued by the oil and gas division of the Michigan Conservation Commission. Six townships were represented. The two new Ogemaw tests will be J. W. Leonard, trustee's No. 1 Joseph and Catherine Heintz, SW NE NE Section 24-22n-1e, Ogemaw Township and County, near an earlier producer, and Paul R. Cash, trustee's No. 2 Wobig Heirs, NW SW NE Section 6-2n-3e, Mills Township, also near a former Dundee producer. The Wittmer Co. took out permit for a new Isabella Township and County test, the No. 2 John Pollard Estate, C S SW SW Section 1-15n-4w, and Charties Oil Co. a permit for No. 1 Gus Pollard, S NW NW, same section. Both are gas tests.

Two Mecosta County gas tests will be drilled: Jasmid Oil Corp.'s No. 1 Coopersville State Bank, C NW SE Section 22-13n-10w, Aetna Township, Mecosta County, and Albert R. Wendt, trustee's No. 1 R. C. and Lovicia M. Dart, C NW SW Section 11-14n-9w.

Reed Oil Co.'s former No. 3 Paulson-Barlow permit for an oil test in Section 8, Muskegon Township, has been canceled and reissued for No. 1 J. J. Fagan, SW NE SW Section 10-10n-16w, Muskegon Township and County, on which operations have been started.

Late Completions

Two new Dundee oil producers, a new Michigan Stray sand gasser, a probable third oil well and a dry hole were late completions. M. J. Ingold's No. 1 Hobohm and Wheeler, NE NW NW Section 29-22n-2e, West Branch Township, Ogemaw County, was estimated good for more than 100 bbls. a day after treatment in the Dundee. It was drilled to 2,744 feet. Jackson-Meyer Syndicate's No. 1 Hughes, SW SE NE Section 19-15n-3w, Denver Township, Isabella County, was brought in for an estimated 50 to 100 bbls. natural in the Dundee with treatment contemplated. McClanahan Oil Co.'s No. 1 B. Wonsey, in Section 33, same township, also reported a hole full of oil with treatment expected to make it a commercial producer in the Dundee.

Stewart-Atha Interests' No. 1 John A. McDonald, C NW SE Section 25-16n-4w, Vernon Township, Isabella County, was brought in with an initial open flow capacity of 1,400,000 feet of gas daily in the Michigan Stray sands. It is expected to result in further drilling.

Gordon Oil Co.'s No. 1 John Demski, SW NW SE Section 28, Denver Township, which failed to pick up the pay after being drilled to 3,628 feet in the Dundee, was plugged and abandoned as a dry hole.

Spacing Plan

Plans for a spacing pattern and development program for new areas now being drilled in Ogemaw County were to be discussed at a special meeting with the Michigan regulatory committee in Mount Pleasant Wednesday, January 23. The new plan will be submitted to the federal oil regulatory board for approval such as recently announced for the original Weber-Wilcox Pool. This pool, comprising about 4,500 acres, was limited to 28 new wells in 1935 in an order issued January 2 by Harold L. Ickes, national oil administrator. Two other areas since have been opened in Ogemaw County.

Sales and Service Staff Holds Conference

Twenty members of the sales and service staff of Houston Oil Field Material Co., assembled in Houston for a conference to formulate plans for 1935. This organization now has more than 50 representatives and has stores located at points of leading activity from Houma, La., on the east to Eunice, N. Mex., on the west, and from Sam Fordyce, Tex., on the south to Kilgore on the north.

Bottom row, left to right: Joe Duncan, store manager, Eunice, N. Mex.; Joe Teuton, store manager, Houma, La.; Howard Salter, Louisiana sales; Charlie Smith, district manager, Freer and Sam Fordyce; Albert Peters, store manager, Kilgore; Herman Moon, Gulf Coast sales; Carroll Graham, store manager, Lake Charles; G. W. Hunt, Houston city sales, and W. B. Stallings, store manager, Houston.

Top row, left to right: W. F. Hunt, Kilgore salesman; W. M. Garney, Houston office; J. E. Lassiter, Gulf Coast sales; Ted Brouilette, Houston office; A. W. Waddill, Houston city sales; George O'Leary, vice president and general manager; Bob Ewen, auditing and credits; J. E. Peters, secretary-treasurer; Jack Clark, vice president; Ed Robertson, Beaumont city sales, and L. L. Talley, Houston office.

Increase of 65,800 Bbls. in February Allowable

WASHINGTON, D. C., Jan. 21.—An increase of 65,800 bbls. daily in the national allowable crude oil production was authorized for February in an order announced by Administrator Harold L. Ickes. February's daily production was placed at 2,526,100 bbls., compared with 2,460,300 bbls. daily authorized for January.

The increase was deemed necessary to meet preparations for the opening of the spring season.

The largest increase was authorized for Texas, a jump of 24,900 bbls. to 1,031,700 bbls.

State—	Dly. av. (bbls.)
Arkansas	32,000
California	488,600
Colorado	3,500
Illinois	11,700
Indiana	2,200
Kansas	138,600
Kentucky	14,800
Louisiana	109,500
Michigan	30,000
Montana	9,500
New Mexico	49,400
New York	10,300
Ohio	11,700
Oklahoma	497,100
Pennsylvania	39,000
Texas	1,031,700
West Virginia	11,000
Wyoming	35,500
Total	2,526,100

Deep Tests in Eastern Field Are Making Progress; Fair Well in Ritchie County, West Virginia

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Jan. 21.—The deepest of the tests drilling to the Oriskany sand in Elk district, Kanawha County, West Virginia, is 4,600 feet. This test is being drilled by S. B. Avis, trustee, on the W. T. Copen farm and was forced to shut down at that depth for rig repairs. On the island at the mouth of Coopers Creek, V. C. Smith and others have reached 2,774 feet. About 1,000 feet east of the producer on the W. L. Burdette farm Clyde Oil & Gas Co. is drilling at 1,970 feet. The Elk River Oil Co. reached a depth of 670 feet on the W. T. and J. H. Goshorn farm and then shut down for boiler repairs. Benedum & Trees are drilling at about 600 feet on the Mary C. Wingfield farm.

About 1,500 feet east of the F. W. Shinn farm, Grosscup and others have made a location on the Mary E. Jarrett heirs farm. These operators are the owners of the producer on the Burdette farm which is producing about 30 bbls. a day at a depth of 4,835 feet and is the initial Oriskany sand producer in the state.

Fifteen wells and five dry holes were added to completion totals in the lower eastern fields during the week. Six were gas wells and nine producers with an initial production of 137 bbls. Southeast Ohio continues to lead in new production.

SOUTHEAST OHIO

In Knox County there were two failures. In Section 20, Butler Township, Ohio Fuel Gas Co. drilled a test on the Lewis B. Delong farm through the Clinton sand to 3,110 feet and it had a showing of only 1 bbl. a day, natural, in the sand. The producers intend to plug it. In the same section this company drilled a test on the Harold Scott farm through the Clinton sand to 3,108 feet and it had a small showing of gas only.

In Licking County, in the shallow pool in Mary Ann Township, Lot 2, C. R. Settles completed No. 3 on the O. B. Evans farm in the Berea sand at a depth of 583 feet. It produced 7 bbls. the first day after shot and will make a 1½-bbl. pumper.

In Medina County, Kemrow Co. completed a second test on the Helman farm, SW Section 24, Brunswick Township in the Berea grit at a depth of 435 feet. It produced 2 bbls. the first day after shot.

In Monroe County, H. G. Clymer, trustee, and others drilled a second test on the J. H. Shafer farm, SE Section 11, Bethel Township, through the Keener sand to 1,385 feet. It was dry.

In Muskingum County, Sutton Oil Co. completed a test on the W. W. Baughman farm in the southwest corner of the township, Section 11. It was drilled in the Medina sand at a depth of 4,037 feet and produced 10 bbls. the first day, natural, which was increased to 40 bbls. a day, after shot.

In Washington County there were several completions. In the southeastern part of Section 8, Palmer Township, Robert W. Turney and others completed No. 15 on the Myron E. Leasure farm in the Parker sand at 561 feet. It is showing for more than 25 bbls. a day. In this Township, and Lot 1,065, the west central part of the township, McCoy and Lochary completed a test on the L. T. Hile farm in the Cow Run sand at 538 feet. It will make a 2-bbl. pumper, natural. In SE Section 33, Aurelius Township, J. C. Carner and others completed No. 3 on the Emma L. Jackson farm in the grit at a depth of 1,555 feet. It will make a gas well from the formation at 1,545 feet.

In this county, Harris Drilling Co. completed a well which is deeper than the usual drilling in Washington County. In NW cor. SW Section 11, Grandview Township, a test was drilled on the David Pool farm to 3,108 feet. A shot was placed at 2,662-70 feet, the Bayard sand, and it is rated at 7 bbls. a day. Natural, it was showing for 5 bbls. a day. This depth recalls the Joseph Crago well in the same township which caused a flurry of drilling to depths of about 3,300 feet. On Archers Fork in Section 34, Independence Township, Frank Creighton and others completed No. 3 on the Zelman Ludington farm in the Injun sand at a depth of 1,540 feet. It is showing for 3 bbls. a day, natural, along with about 40,000 feet of gas a day.

SOUTHWEST PENNSYLVANIA

Southwest Pennsylvania continues fairly inactive. During the week, one small gas well and one dry hole were reported. In Amwell Township, Washington County, Wise Oil & Gas Co. drilled the test on the Jacob Snyder farm to 3,115 feet. The top of the Gordon Stray sand was at 2,837 feet with about 20,568 feet of gas showing at 2,888 feet. It was shot with 40 quarts and is now being cleaned out for test.

In South Franklin Township, Carnegie Natural Gas Co. drilled deeper No. 1 on the S. A. Dague farm to a total depth of 3,249 feet. It is dry in all formations and is the first failure on the Fifth sand streak.

In Amwell Township, Washington County, Carnegie Natural Gas Co. has resumed drilling on the M. Manon farm, and is now at 1,725 feet. On the R. M. Carrons farm, this company is drilling at 1,250 feet. F. K. Fawcett and others are down 2,985 feet on the J. C. and Anne Phelan farm.

In East Findley Township, the Natural Gas Co. of West Virginia is drilling at 2,310 feet on the G. W. Tilton farm. The top of the Big Injun sand was at 1,985 feet and extended to 2,185 feet. There was a showing of gas at the top and again at the bottom of this formation. On the T. F. Ealy farm, the test has reached 1,350 feet. In Morris Township, James McCracken & Co. are down 1,980 feet in deepening the test on the H. B. Saunders farm.

In Richhill Township, Greene County, Lewis & Co. have started drilling on the S. C. Chess farm. In Greene Township, John Lantz has reached 2,635 feet in deepening the test on his own farm. In Gilmore Township, Johnson and Eddy have reached 850 feet in the second test on the W. L. B. Roberts farm.

WEST VIRGINIA

There was only one producer completed in West Virginia during the week, a fair well in the lower Pike Pool in Clay district, Ritchie County. Mahaney and Lucas completed No. 4 on the J. F. and Laura Kelley farm in the Injun sand showing for 50 bbls. a day. No. 3 was the largest on the farm and initially produced 120 bbls. a day.

At this time of the year in West Virginia drilling in oil areas diminishes due to hardships of the terrain and transportation. All indications point to an increased revival of activity with milder conditions as the refinery demand for this crude continues unabated. It is also expected there will be additional reconditioning work done.

Gas Wells

In Boone County, Pure Oil Co. completed No. 71 on the Federal Coal Co. tract in Sherman district in the Weir sand at a depth of 3,172 feet. It is a light gas well, gauging only about 27,000 feet a day. In this district Godfrey L. Cabot, Inc., abandoned No. 3 on the Central Trust Co. lease, and Hope Natural Gas Co. abandoned No. 54 on the Federal Coal Co. tract.

In Calhoun County, Henderson Oil Co. drilled a test on the J. E. Parsons farm in the Injun sand to a total depth of 2,018 feet. It is a small gas well with a showing of about 3 gallons of oil in 28 hours. It is in Washington district.

In Ritchie County, on the waters of Dutchman Run in Murphy district, W. R. Hays and others completed a second test on the M. J. Livingston farm in the Injun sand at 1,921 feet. It is a gas well gauging 268,000 feet a day. In this district and on the same stream, O. J. Stout drilled deeper No. 3 on the A. E. Ryan farm in the Injun sand to 1,905 feet. It is a very light gas well. In Clay district, Lucky Strike Oil Co. drilled No. 3 on the L. E. Robinson farm through the Injun sand to 2,125 feet. It was dry in all formations.

In Tyler County, Gilco Oil & Gas Co. drilled No. 3 on the William Way farm in McElroy district through the Injun sand to 1,996 feet. It was dry in all sands.

Drilling in West Virginia

In Boone County, Boone County Coal Corp. has started drilling on its own property in Washington district. In Sherman district, Pure Oil Co. has two wells drilling. On the Federal Coal Co. tract, its No. 72 has reached 2,245 feet and on the A. M. Prichard lease, No. 3 is at 957 feet.

In Cabell County Brown Gas Co. is drilling on the Floyd L. Bias lease in McComas district which has reached 1,300 feet. Boyles and Gardner have made a location on the Edward Owens farm. R. H. Adkins and others are drilling at 2,650 feet on the F. F. Starcher farm, a test.

In Calhoun County, Washington district is the most active section. There at least six wells are drilling with others in prospect. Howard Jarvis and others are drilling at 720 feet on the J. S. Rogers farm, a test. Everett Starcher and others are down 1,243 feet on the Lubana J. Jarvis farm. Jarvis Gas Co. is down 1,135 feet on the C. L. and G. W. Jarvis farm. Carroll and Hamilton are drilling at 2,035 feet, the Injun sand, on the E. C. Knotts heirs farm, also a test. In Lee district, M. F. Crawley is down 1,850 feet on the Lester and Riggs and others lease. Mudlick Oil & Gas Co. is shut down at 1,740 feet on the G. W. Bennington farm. In Sherman district Starcher and Richards are down 1,650 feet on the Graybill heirs farm. A. Rothwell has started drilling on the J. H. Sturms farm. Godfrey L. Cabot, Inc., is down 1,825 feet on the Henry Kight farm. In Center district, South Eastern Gas Co. is drilling at 600 feet on the Rosa Daubins farm, a test. In Sheridan district, T. W. Elliott and others are drilling at 1,450 feet on the Guy Freed and others lease.

In Gilmer County, Friendly Oil & Gas Co. has the material on the ground on the H. C. Stalnaker farm in DeKalb district. In Center district McCall Drilling Co. has reached 1,750 feet in the second test on the E. G. Rohrbaugh farm.

In Kanawha County on Little Spring Fork of Campbells Creek, Malden district, Godfrey L. Cabot, Inc., is drilling deeper No. 2 on the Blue Flame farm of the Campbells Creek Coal Co. lease. It is now 4,485 feet. The test is in gas territory with the nearest oil production about 6 miles northeast. In Washington district, Kanawha County, Harvard Gas Co. has started drilling a second test on the William Compton farm.

Pleasants County

In Pleasants County, Tyler Oil Co. is

(Continued on Page 86)

A. G. "Ab" Schuler, scout for the Arkansas Pipe Line Company, Longview, and C. E. "Charley" Kerr, scout for the Illinois Pipe Line Company, Troup, Texas.

California's Umpire Warns Operators Violations of Production Quotas Will Invite Trouble

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., Jan. 21.—Umpire Pemberton, following notification from several operators that they would not conform with the curtailment order until alleged discrimination was eliminated, issued a stern warning to producers in the San Joaquin Valley that any one who intentionally violated his production quota would face injunction proceedings.

Charles Fahy, chairman of the petroleum administrative board, telegraphed to Umpire Pemberton: "Some question has been raised as to the effect of the recent Supreme Court decision on enforcement of proration in California. Since the court invalidated only a particular and isolated section of the recovery act, dealing with interstate movements of oil produced in violation of the state law and specifically and definitely expressed no opinion as to the validity of the petroleum code, and since proration of production in California has been pursuant to the petroleum code and has been sustained by the federal courts in California, proration schedules and quotas as now compiled for California producers still have full force and effect of law and the petroleum administrator will continue vigorous administration of laws."

After the Supreme Court decision, California operators viewed the possible reaction with concern, fearing attempts might be made to dump gasoline refined from hot oil into the state. No such attempt seems to have been made. H. M. Zeiger of the state division of weights and measures informed Umpire Pemberton: "In view of the recent Supreme Court decision, it seems practical that we should anticipate movements of illegally produced petroleum products from the State of Texas into California. We have a law which prevents any such practice and it is enforceable. We stand ready to enforce it and you will find this division of weights and measures ready to give you any assistance you may deem necessary in curtailing an influx of any of the above mentioned products."

Epic Legislation Initiated

State Senator Culbert L. Olson, successful epic candidate from Los Angeles, has lost no time in introducing a bill embodying many features of the so-called epic plan sponsored by Upton Sinclair during the last gubernatorial election. The measure, which is not expected to receive enough votes to make it effective, provides for a tax of 10 cents a barrel of oil produced; 1 cent for each 1,000 feet of natural gas produced and tripling of taxes on corporations. A number of companion bills have been introduced by other members of the legislature.

Operators in the Playa Del Rey Field of Los Angeles Basin thought that everything had been settled and that they could now proceed with development work but they failed to visualize future conditions. The Los Angeles city council, after passing a regulatory bill permitting drilling operations in the town lot section of the Playa Del Rey Field, decided to reconsider the motion. As a result of this action the status of the town lot district is still undetermined but a definite decision is expected soon. The ordinance as originally passed by the council restricted drilling within 2,500 feet from the high tide line; prohibited drilling operations on any property having an area of less than one acre and gave lot owners having less than one acre an interest in production developed on adjoining property. This last provision caused anxiety on the part of lessors of adjoining acreage. Failure of the council to stipulate the precise "interest" rendered the bill of no effect and accordingly the council asked the mayor to return the measure unsigned so that it might be corrected. The council has been attempting to prevent town lot drilling and the provision preventing the drilling of any well on property containing less than one acre was designed to force owners of the 12 lots to sign the community lease.

Continental May Drill Test

The Continental Oil Co. has not yet decided whether it will drill a test on 850 acres southeast of the Playa Del Rey Field but should make a definite decision in the near future. This property was recently rezoned in order to permit development but the regulations were so severe that drilling and production costs will prove rather high. The company is making another survey and will attempt to correlate all available data in order to determine the possibility of developing commercial production. All future drilling within the corporate limits of Los Angeles will be subject to the measure recently enacted and which provides for a fee of $100 for a drilling permit and an additional $25 to cover inspection costs incident to development.

An ordinance voted more than a decade ago will be given a court test within the next 60 days in conformity with an order handed down by the State Supreme Court relative to the Huntington Land Co. and the Chanslor Canfield Midway Oil Co. suit asking nullification of restrictions on drilling within the original city limits of Redondo Beach. The ordinance in question was adopted at a special election held in 1923 after one of the bitterest campaigns in the history of the city. In the Superior Court, about two years ago, a judgment was awarded the city but the appeal to the highest state court ordered the suit to be tried on its merits. This case is of prime importance now as the city of Redondo Beach recently, through its council, signed a lease with Vern Dumas for development of a piece of property originally purchased for park purposes.

High Potential Recorded

Any doubt which may have existed as to the potential production of Charles W. Fourl's recent completion in the extreme eastern end of the Playa Del Rey Field of Los Angeles Basin was definitely removed this week upon completion of a five-day flow test. This well produced 5,215 bbls. during the first day, 5,400 bbls. during the second day, 5,425 bbls. during the third day, 5,725 bbls. during the fourth day and 5,760 bbls .during the sixth day.

The only question now confronting the Central Committee, which ordered the test is just who is going to absorb the excess produced during the flow test. Ordinarily the well making the flow test makes up any excess by effecting a comparable underproduction but in this instance Fourl was willing to forego the usual flow test and accept an arbitrary figure as long as it was within striking distance of the well's real potentiality. Fourl did not doubt for a single moment that the well would produce substantially in excess of 5,000 bbls. per day and did not hesitate to say so.

The Union Oil Co. will be the next to give the deep zone in the eastern end of the field a production test and the outcome of work will be watched with considerable interest since this well is located between Fourl's producer and the older section of the field. The Union's projected producer is No. 6 Vidor, a direct offset of the Fourl well, and for this reason the initial daily production should be somewhat comparable.

Some question has arisen as to whether there is a faulted condition in this section of the field due to the great disparity between initials of wells and the depth at which they have been completed. Up to the present the Union's wells on the Vidor lease have been running fairly uniform with respect to depth and initial daily production. Fourl's new well, however, just cannot be explained unless the large production developed is due directly to the finding of a normal oil sand. This seems to be the answer because the Union has also found an oil sand in No. 6 Vidor. Several wells are drilling ahead in the small amount of undeveloped acreage lying between the town lot area and the older section of the field but it will be another several weeks before these projects reach the pay.

Santa Barbara Mesa

Two more good wells were finished in the Santa Barbara Mesa Field this week when the Rio Grande Oil Co. completed No. 4 Perkins and the Crude Oil Co. finished its No. 2. The former was brought in flowing 808 bbls. of clean 17.8 gravity oil per day from 2,051 feet after an 8⅝-inch water string had been landed and cemented at 2,034 feet. The Crude Oil Co.'s No. 2 was finished doing 761 bbls. of clean 16.9 gravity oil per day from 2,083 feet. Daniel Fisher's No. 1 Mesa, finished last week, failed to hold up to initial indications and the well proved good for only 877 bbls. after it had settled. During the first three hours it flowed at the rate of 3,000 bbls. per day but dropped down as soon as the gas head had blown off. Jacques Vinmont's recent completion also showed a substantial decline after completion as it is now good for only 94 bbls. per day. Operators in the Santa Barbara Mesa Field have raised a fund of $7,000 to be used in the construction of a waste water disposal system and actual work is expected to get under way shortly.

Roy W. Wilson, chairman of the Waste Water Committee of the Operators' Association is endeavoring to obtain the co-operation of other operators in order that the remaining amount of funds may be raised as quickly as possible. Operators in this field are subject

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN POINTS

	Jan. 6—		Dec. 31—			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Fuel oil	.....	.....	.....	.....	.....	309,234
Gasoline	69,108	9,873	273,516	39,074	69,108	74,451
Kerosene	.....	.....	203,321	29,117	.....	79,630
Foreign exorts—						
Crude oil	58,161	8,309	92,740	13,249	58,161	62,870
Fuel oil	23,074	3,296	673,120	96,160	23,074	89,484
Diesel and gas oil	5,450	779	132,578	18,940	5,450	12,025
Gasoline	.....	.....	174,332	24,905	.....	150,208
Kerosene	.....	.....	.....	.....	.....	27,388
Coastwise-domestic—						
Crude oil	138,896	19,842	.....	.....	138,896	.....
Fuel oil	378,110	54,016	207,393	29,628	378,110	237,918
Diesel and gas oil	.....	.....	30,792	4,399	.....	.....
Gasoline	320,828	45,833	105,782	15,112	320,828	239,231
Kerosene	11,388	1,627	.....	.....	11,388	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Lubricants	.....	.....	5,431	776	.....	.....
Foreign exports—						
Crude oil	.....	.....	71,914	10,273	.....	76,255
Fuel oil	.....	.....	25,192	3,599	.....	60,375
Diesel and gas oil	1,174	168	.....	.....	1,174	795
Gasoline	62,530	8,933	69,572	9,939	62,530	63,315
Kerosene	14,370	2,053	33,190	4,741	14,370	10,960
Lubricants	.....	.....	10,875	1,554	.....	14,464
Coastwise-domestic—						
Fuel oil	43,482	6,212	160,480	22,926	43,482	.....
Diesel and gas oil	10,490	1,499	.....	.....	10,490	12,876
Gasoline	.....	.....	153,305	21,901	.....	14,931

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Speik, F. A., No. 1 Athens, Los Angeles Co.	2- 3-14	3,090	sd. sh. drlg.
Lennox Oil Fields Co., No. 1 Hawthorne, Los Angeles Co.	9- 3-14	....	material
Ackerman, J. M., No. 1 Athens, Los Angeles Co.	18- 3-14	.....	rigging up
Macrate, A. N., No. 1 Athens, Los Angeles Co.	18- 3-14	6,000	sd. sh. drlg.
Hillside Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	....	grade
Wilshire Oil Co., No. 2 Potrero Deep, Los Angeles Co.	27- 2-14	7,995	looks wet
Trinity Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	....	rigging up
Madison Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	....	rigged up
Mammoth Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	108	sd. drlg.
Fourl, C. W., No. 2 Del Rey, Los Angeles Co.	27- 2-15	750	cmtd.
Dunlap, D. D., No. 1 D. D., No. 1 Del Rey, Los Angeles.	27- 2-15	3,960	sd. sh. drlg.
Pacific Drlg. Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	80	tech. spud.
Union Oil Co., No. 6 Del Rey, Los Angeles Co.	27- 2-15	5,940	cmtd. 5,930
Union Oil Co., No. 7 Del Rey, Los Angeles Co.	27- 2-15	750	cmtd.
Big Ben Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	5,750	sd. sh. drlg.
Bethlehem Expl. Co., No. 1 Manhattan, Los Angeles Co.	30- 2-14	5,304	suspended
Staple Oil Co., No. 1 Manhattan, Los Angeles Co.	24- 2-15	6,854	sd. sh. drlg.
Universal Consd. No. 4 Montebello Deep, Los Angeles Co.	6- 2-11	4,517	form. test
Shively, N. O., No. 1 Puente Hills, Los Angeles Co.	33- 2-10	2,800	suspended
Pressel & Tul, No. 1 Puente Hills, Los Angeles Co.	30- 2- 9	4,147	suspended
International Dev. Co., No. 1 Saugus, Los Angeles Co.	34- 5-16	4,353	hd. sh. drlg.
Barstow Oil Co., No. 1 Castaic, Los Angeles Co.	25- 5-16	3,265	suspended
Republic Pet. Co., No. 1 Newhall, Los Angeles Co.	6- 3-15	341	sd. sh. drlg.
Black Eagle Oil Co., No. 1 Huntington, Orange Co.	tideland	4,702	cmtd. 4,245
Explorers Drilling Co., No. 1 Fairview, Orange Co.	9- 6-10	945	suspended
Nuoil Co., No. 1 Newport, Orange Co.	29- 6-10	6,485	suspended
B & B Oil Co., No. 1 Newport, Orange Co.	19- 6-10	3,872	sd. sh. drlg.
Shannon, C. G. No. 1 Yorba, Orange Co.	21- 3- 9	5,777	rigging up
Great American Pet. Co., No. 2 East Coyote, Orange Co..	19- 3- 9	3,155	cmtd. 3,152
Tehama Pet., No. 1 Santa Ana Canyon, San Bernardino.	32- 2- 8	3,698	P. B. 3,381
San Diego Pet. Co., No. 1 Chula Vista, San Diego Co.	32-18- 2	6,330	fish. D. P.
Edmonds, E. A. No. 1 Trustee, San Diego Co.	29-15- 3	2,431	hd. sd. drlg.
Great Coastal Oil Co., No. 1 Elsinore, Riverside Co.	36- 5- 5	721	hd. sd. drlg.
Corona Oil Co., No. 1 Corona, Riverside Co.	27- 3- 7	....	rigging up

to a stiff fine if they permit any oily waste to reach the ocean. Similar work in Los Angeles Basin fields has proven especially effective as in most cases the initial cost was the only outlay required. After the systems had been placed in operation salvaged oil provided sufficient funds to meet current expenses.

Capitan

The Shell Oil Co. added a new well to its list of producers in the Capitan Field of Santa Barbara County this week by finishing No. 2 Orella doing 60 bbls. of 36.1 gravity oil per day on the beam. This well may require some additional work, however, as the output is still cutting about 50 per cent. No. 2 Orella was given a production test upon completion at 3,199 feet but since the water string was landed at 2,700 feet it may be possible that too much hole has been taken in. In the Elwood Field, the Barnsdall and Rio Grande which are jointly developing several leases, completed No. 8-A on tideland permit No. 88 and this new well was brought in pumping 149 bbls. of 35.1 gravity oil per day from 3,375 feet after the hole had been finished with a 6⅝-inch perforated liner and a 10¾-inch water string landed and cemented at 3,324 feet.

Continental Oil Co. seems to have the makings of a small well although a commercial producer in the Ojai district of Ventura County and the test to be made some time within the next week or 10 days will be watched with interest. Completion of even a small commercial producer will prove advantageous since the Continental has tied up all the adjoining acreage and will thus be in a position to proceed with development along conservative lines.

The Associated Oil Co. is expected to complete No. 3 Dabney Lloyd in the eastern end of the Ventura Avenue Field within the next fortnight and the outlook is rather promising for commercial production. This well staged a premature blowout several weeks ago and the company was obliged to replace a lot of surface equipment before drilling could be resumed.

The petroleum administrator has approved a development plan for the future guidance of operators in this field contemplating development of the deep 57 zone and it appears to be quite acceptable. Under the terms of this agreement, operators in the Ventura Avenue Field will be permitted to complete 19 new wells in the 57 zone during 1935. This should prove ample as the drilling cost has proven rather high due to mechanical trouble which has proven prevalent in this district.

Edison

The General Petroleum completed No. 1 Jed in the Edison Field of Kern County this week, pumping 126 bbls. of 16.8 gravity oil per day from 2,906 feet after the hole had been plugged back from 2,989 feet. This well sanded up several days after completion and the company will be obliged to clean out the hole before it goes on steady production.

No completions were chalked up in the Mountain View Field but operators are expected to make up for lost time during the forthcoming seven-day period. It is likely, however, that completions in this field will become less numerous as operators seem to be feeling their way along.

Long Beach

Operators in the Long Beach Field of Los Angeles Basin experienced a busy period during the past week as six wells were completed. One of these projects was a recompletion which was returned to production after the hole had been cleaned out to bottom, 4,161 feet. This was the Apex Petroleum's No. 1 Stephens which was brought in pumping 198 bbls. of relatively clean 25.9 gravity oil per day. Oscar Dye's No. 3 Berry was good for 278 bbls. per day from 4,682 feet after the hole had been finished with a 4¾-inch liner carrying 700 feet of perforated. Huntington Investment Co.'s No. 2 H.B. proved to be a little larger well as it was brought in pumping 371 bbls. from 4,948 feet after the hole had been finished with a 4¼-inch liner carrying 175 feet of perforated.

The Pacific Empire Oil Co.'s No. 1 Huntington was completed pumping 290 bbls. following completion at 4,130 feet. The Union Oil Co. finished its first new well in the Long Beach Field in several months when it brought in No. 25 Long Beach Community pumping 307 bbls. per day from 3,950 feet after the hole had been completed with a 6⅝-inch liner carrying 42 feet of perforated. V. R. G. Wilbur's No. 4 Bergstrom, another new well, was finished pumping 141 bbls. per day following completion at 4,641 feet and the landing of a 6⅝-inch liner carrying 812 feet of perforated. In the Santa Fe Springs Field of Los Angeles Basin, the Union Oil Co. completed No. 25 Alexander a new well following completion at 3,740 feet in the Bell zone. This new producer showed an initial daily production of 298 bbls. It is evident that the Union's appeal to the petroleum administrator for a revision in the allowable daily production of the Santa Fe Springs Field failed as this company has spudded in two new wells, started construction of two new rigs and has staked location for six additional wells. This indicates that the Union has decided to proceed with an aggressive drilling program in the Santa Fe Springs Field.

Jersey to Sell 400,000 Shares to Employes

WASHINGTON, D. C., Jan. 21.—Taking advantage of the simplified requirements adopted by the Securities and Exchange Commission, Standard Oil Co. (New Jersey) has filed notice of its intention to register under the Securities Act of 1933 a $10,000,000 issue of capital stock, which it intends to make available to its employes.

The company decided last year that under the requirements then in force it was unable to register securities for the refinancing of $90,000,000 in 5 per cent debentures, which it called for February 1, 1935.

In connection with that transaction Walter C. Teagle, president, said at that time:

"Prompt action being deemed advisable, a public offering involving registration could not be considered because the company is not in a position to submit a certificate of independent audit. Such an audit covering subsidiaries operating in all parts of the world has been under way since May 1, 1934, but will not be completed before next spring."

For handling the operation without registration, the company decided to pay $8,000,000 in cash out of the treasury and arrange for $45,000,000 in short-term bank notes and for the private distribution of $37,000,000 of serial debentures.

This decision was reached after frequent consultations with the Federal Trade Commission and the S.E.C., at which the company officials tried to work out some plan under which it could collect and certify more quickly the great mass of data which it felt registration then demanded.

The efforts of the company to meet the specifications laid down and its representations of inability to do so played an important part in bringing about the revision of the registration form and regulations.

The stock for which registration will be sought under the Securities Exchange Act of 1934 for registration on the New York Stock Exchange consists of 400,000 shares of $25 par value capital stock, which the company intends to issue under its plan for employes. The notice to prospective participants follows:

"Under the provisions of the Securities Act of 1933, shares of the capital stock of Standard Oil Co. (New Jersey) purchased by the trustees of the fifth stock acquisition plan are required to be registered with the Securities Exchange Commission, Washington, D. C., upon completion of an audit of Standard Oil Co. (New Jersey) and its subsidiaries now being made. It is anticipated that the audit and registration will be accomplished not later than July 1, 1935.

"Deductions from salaries and payments to the trustees may be authorized, effective January 1, 1935.

"Pending registration under the Securities Act of 1933, the trustees will not issue shares of stock to employes participating in the fifth stock acquisition plan. Upon completion of such registration, there will be made available to each employe participating in the plan a prospectus covering the stock to be distributed under the plan. When such prospectus is made available, each employe participating in the plan will have the opportunity of deciding whether he desires to continue in the plan; and in the event of withdrawal, deposits will be refunded, with interest at the rate of 6 per cent per annum. Any employe who does not withdraw within 30 days after such prospectus is made available to him will be presumed to have elected to continue in the plan."

Thomas B. Judge Elected South Penn Treasurer

OIL CITY, Pa., Jan. 21.—Thomas B. Judge, formerly of Oil City, was elected treasurer of South Penn Oil Co. to succeed Samuel G. Hartman, retired, following the annual meeting of the directors in Pittsburgh.

Mr. Judge had an early interest in the petroleum business as a Western Union messenger on the floor of the Oil City Oil Exchange, under the management of Frank P. Thompson. He was assigned to the late Calvin N. Payne for special service. After learning telegraphy Mr. Judge was employed as commercial news department operator, broadcasting floor transactions under the supervision of Joseph W. Orr, official recorder of sales, who later became city editor of the Oil City Derrick.

In 1903 Mr. Judge joined the office force of the South Penn Oil Co., Midland division. This division was merged with the South Penn Co. proper at Pittsburgh in 1918. In 1921 Mr. Judge was transferred to New York City as eastern representative of South Penn Oil Co. and Penn Mex Fuel Co.

Mr. Hartman began his career in the industry in October, 1890, with the Ohio Oil Co., as a clerk under J. C. Donnell, then field superintendent and later president. Five years later Mr. Hartman was transferred to the accounting department in Oil City under F. S. Bates, who later became treasurer. In 1902 Mr. Hartman went to Pittsburgh as assistant treasurer of South Penn, and two years later was elected treasurer. He was made a director in 1912. Mr. Hartman will continue to live in Pittsburgh and winter in Florida. At the meeting he was the recipient of numerous gifts.

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
General Pet. Co., No. 12 Capitan, Santa Barbara Co.	32- 5-30	2,450	hd. sd. drlg.
Shell Oil Co., No. 2 Capitan, Santa Barbara Co.	32- 5-30	3,199	pump 50 b.d
Shell Oil Co., No. 4 Capitan, Santa Barbara Co.	5- 4-30	....	grading
Royalty Serv. Corp., No. 1 Los Alamos, Santa Barbara Co.	35- 9-32	4,500	suspended
York-Smullin, No. 2 Lompoc, Santa Barbara Co.	33- 8-34	2,360	sd. sh. drlg.
Barnsdall-R o Grande, No. 10-88 Elwood, Santa Barbaaa	tideland	...	rigging up
East Elwood Pet. Co., No. 1 Elwood, Santa Barbara Co.	14- 4-29	3,732	cmtd. 3,672
Shell Oil Co., No. 1 Goleta, Santa Barbara Co.	20- 4-28	6,130	rd. sd. drlg.
Standard Oil Co., No. 2 Goleta, San.a Barbara Co.	17- 4-28	4,850	cleaning out
Ortega Oil Co., No. 1 Summerland, Santa Barbara Co.	16- 4-26	4,583	cleaning out
Woodrow Pet. No. 1 Rincon, Ventura Co.	4- 3-24	7,612	suspended
General Pet. Co., No. 4 Rincon, Ventura Co.	tideland	....	bldg. found
Las Posas Pet. No. 1 Las Posas, Ventura Co.	22- 3-20	7,370	cmtd. 7,000
El Rancho Oil Co., No. 1 South Mountain, Ventura Co.	9- 3-19	....	bldg. rig
The Texas Co., No. 128 South Mountain, Ventura Co	4- 3-19	5,430	fish D. P.
Oil Ridge Oil Co., No. 1 Fillmore, Ventura Co.	1- 4-19	1,500	suspended
Bolsa Chica Oil Co., No. 2 Piru, Ventura Co.	4- 4-18	571	hd. sh. drlg.
Dawson Oil Co., No. 1 Simi, Ventura Co.	5- 2-17	1,876	suspended
Rancho Oil, Inc., No. 1 Ojai, Ventura Co.	18- 4-23	2,525	suspended
Con.inental Oil Co., No. 1 Ojai, Ventura Co.	12- 4-23	1,543	O. S. drlg.
Prop. Service Corp., No. 1 Lloyd, Ventura Co.	24- 3-23	7,175	plug 7,110
Mosher, J. W., No. 1 Santa Paula, Ventura Co.	22- 4-21	2,300	cleaning out
Standard Oil Co., No. 1 Lost Hills, Kern Co.	2-26-20	....	rigging up
General Pet. No. 1, South Belridge, Kern Co.	30-28-21	11,377	suspended
Union Oil Co., No. 18 North Belridge, Kern Co.	36-27-20	8,523	redrig. 7,900
Standard Oil Co., No. 1-A North Belridge, Kern Co.	36-27-20	6,531	sd. sh. drlg.
Standard Oil Co., No. 2 North Belridge, Kern Co.	36-27-20	5,671	cleaning out
Amerada Pet., No. 1 Blackwells Corner, Kern Co.	17-26-19	2,668	prod. test
Standard Oil Co., No. 1 Delano, Kern Co.	1-25-23	....	rigging up
Trico Oil & Gas Co., No. 1 Alpaugh, Kern Co.	3-25-23	2,525	gas-shut in
Trico Oil & Gas Co., No. 3 Alpaugh, Kern Co.	36-24-22	....	rigging up
Buckeye Union Oil Co., No. 2 McVan, Kern Co.	10-27-27	1,351	P. B. 1,306
Hancock Oil Co., No. 4 Mountain View, Kern Co.	14-30-28	....	rigging up
Associated Oil Co., No. 1 Mountain View, Kern Co.	3-31-29	5,360	sd. sh. drlg.
Star Pet. Corp., No. 1 Mountain View, Kern Co.	10-30-28	4,154	sd. sh. drlg.
Union Oil Co., No. 4 Moun.ain View, Kern Co.	15-30-28	5,525	suspended
Union Oil Co., No. 5 Mountain View, Kern Co.	15-30-28	5,474	suspended
Union Oil Co., No. 6 Mountain View, Kern Co.	9-30-28	4,261	sd. sh. drlg.
Union Oil Co., No. 7 Mountain View, Kern Co.	22-30-28	1,371	sd. sh. drlg.
General Petroleum, No. 2 Mountain View, Kern Co.	14-30-28	....	bldg. rig
The Texas Co., No. 4 Mountain View, Kern Co.	14-30-28	4,171	sd. sh. drlg.
Barnsdall, No. 3 Mountain View, Kern Co.	31-30-29	6,950	D. P. Stuck
Hogan Pet., No. 6 Mountain View, Kern Co.	4-31-29	4,760	fish. D. P.
Standard Oil Co., No. 5 Mountain View, Kern Co	24-30-28	....	bldg. rig
Ohio Oil Co., No. 1 Mountain View, Kern Co.	33-30-29	3,870	sd. sh. drlg.
National Oil Co., No. 1 Mountain View, Kern Co.	30-30-29	5,693	to set pipe
Mountain View Oil Co., No. 1 Mountain View, Kern Co.	25-30-28	4,000	sd. sh. drlg.
Gilmore-Snyder Oil Co., No. 2 Mountain View, Kern Co.	24-30-28	5,004	sd. sh. drlg.
Jergins Trust, No. 4 Edison, Kern Co.	33-30-29	2,488	P. B. 2,220
Consd. Crude Oil Co., No. 1 Edison, Kern Co.	17-30-29	4,220	sd. sh. drlg.
Ohio Oil Co., No. 1 Edison, Kern Co.	36-30-29	911	sd. sh. drlg.
Shell Oil Co., No. 3 Edison, Kern Co.	14-30-29	3,900	flow. 440 b. d.
Shell Oil Co., No. 4 Edison, Kern Co.	21-30-29	....	rigging up
Monterey Expl. Co., No. 5 Edison, Kern Co.	15-30-29	3,576	flow. 525 b. d.
Chaulk Oil Co., No. 1 Edison, Kern Co.	5-30-29	....	bldg. rig
The Texas Co., No. 1 Edison, Kern Co.	4-30-29	3,877	P. B. 3,518
Foster, Inc., No. 1 Edison, Kern Co.	8-30-29	1,320	sd. sh. drlg.
General Pet., No. 2 Edison, Kern Co.	15-30-29	2,906	pump 120 b. d.
General Pet., No. 3 Edison, Kern Co.	24-30-29	....	bldg. rig
Surety Oil Co., No. 1 Edison, Kern Co.	32-29-29	....	rig suspended
Petroleum Drilling Co., No. 1 Edison, Kern Co.	22-29-29	792	sd. sh. drlg.
Signal Oil & Gas Co., No. 1 Edison, Kern Co.	31-29-30	1,770	sd. sh. drlg.
Signal Oil & Gas Co., No. 2 Edison, Kern Co.	5-30-30	....	material
Saravel Pet., No. 1 Sivert, Kern Co.	19-30-30	1,925	P. B. 1,590
Sea Cliff Oil Co., No. 1 Greenfield, Kern Co.	7-31-28	615	cmtd.
Tejon Ridge Oil Co., No. 1 Comanche, Kern Co.	23-32-29	1,582	suspended
Standard Oil Co., No. 1 Semi-Tropic, Kern Co.	8-27-23	2,350	sd. sh. drlg.
Scepie, J. O., No. 1 Elk Hills, Kern Co.	5-30-24	762	sd. sh. drlg.
Richfield Oil Co., No. 2 Devils Den, Kern Co.	14-25-18	630	sd. sh. drlg.
The Texas Co., No. 1 Temblor, Kern Co.	29-29-21	2,872	br. sh. drlg.
Shell Oil Co., No. 1 Buena Vista, Kern Co.	9-32-25	3,193	sd. sh. drlg.
Reserve Oil & Gas Co., No. 1 Tejon, Kern Co.	2-10-19	300	sd. sh. drlg.
Badger Oil Co., No. 1 Tejon, Kern Co.	31-11-19	6,248	suspended
Russ Oil Synd., No. 1 Dos Palos, Fresno Co.	25-12-11	4,514	suspended
Bergman, Harry, No. 1 Dos Palos, Fresno Co.	12-12-11	6,138	suspended
Union Oil Co., No. 1 Lillis-Kettleman, Fresno Co.	24-21-16	10,944	fish. D. P.
K.N.D.A., No. 56 Kettleman, Kings Co.	8-22-18	10,154	redrig. 9,275
The Texas Co., No. 1 Coalinga, Fresno Co.	35-20-14	1,500	sd. sh. drlg.
Farrel Pet., Well No. 1, San Luis Obispo Co.	15-31-12	1,432	hd. sh. drlg.
Willett Oil Co., No. 1 Cholame, San Luis Obispo Co.	10-25-15	3,605	wet.
Commonwealth Consd. Gas Co., No. 1 Tulare Lake, Kings	21-22-20	2,490	gas-shut in
Commonwealth Consd. Gas Co., No. 3 Tulare Lake, Kings	21-22-20	....	rig suspended
Kettleman Pac. Oil Co., No. 1 Tulare Lake, Kings Co.	11-23-16	812	sd. sh. drlg.
General Pet., No. 1 Devil's Den, Kings Co.	20-24-18	....	rig suspended
Butles Oilfields Co., No. 2 Marysville, Sutter Co.	35-16- 1	6,774	hd. sh. drlg.
Amerada Pet., No. 1 F.L.D., San Joaquin Co.	15- 2- 6	....	material
Pure Oil Co., No. 1 Chowchilla, Madera Co.	7-10-14	8,220	fishing
Northern Counties Pet., No. 1 Tehama, Tehama Co.	25-24- 3	2,420	hd. sh. drlg.
The Texas Co., No. 1 Petrolia, Humboldt Co.	1- 3- 2	1,117	to set pipe

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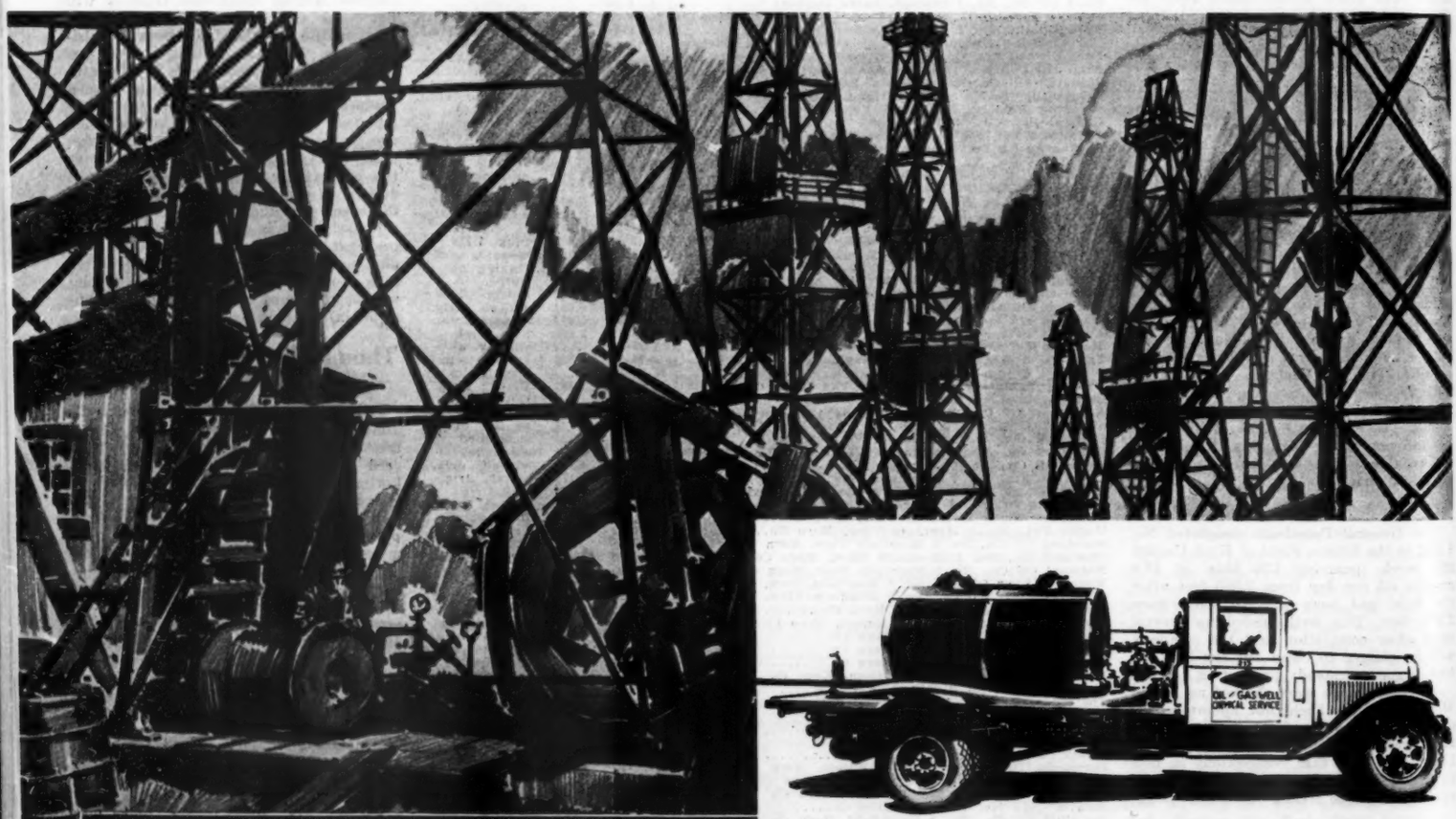

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Three Locations in Cooper Pool, New Mexico; Spud Sundance Test in Lance Creek Field

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Jan. 21.—Auction sale of leases of state land at Santa Fe, N. Mex., on January 10 brought aggregate bids of $37,449 for 29 tracts comprising 36,762 acres. The limits of the Cooper Pool on the northeast appears to have been defined in Humble Oil & Refining Co.'s No. 3 Cooper, deepened to 4,100 feet without any change in results. Same company is preparing to drill a relief well for its No. 1 Coats which caught fire and went wild. Three new locations were released in the Cooper Pool. Two completions, one near completion and one new location were reported in the Eunice Pool. Skelly Oil Co.'s No. 1-B State, which proved 40 acres on the east side, made 221 bbls. in 2½ hours. Continental Oil Co.'s No. 17-A Meyers-4, pumped 250 bbls. of oil and 80 bbls. of water. Gypsy Oil Co.'s No. 2 Bell-State tested 228 bbls. the first 24 hours before acidizing. Gypsy Oil Co.'s No. 1 North Grimes, in the Hobbs Pool, made 4,020 bbls. in 24 hours after acidizing and is retreating. One new location in the Jal area brings the Cooper and Jal Pools closer together. Texas Co.'s No. 4-A Lynch, in the Lea area, was plugged and abandoned and its No. 1 Elliott has 3,100 feet of sulphur water. One gas well was completed in the Artesia area in Eddy County and Pecos Valley Drilling Co.'s wildcat in the Black River district was abandoned.

Colorado had no completions or new locations.

In Wyoming, Ohio Oil Co. is spudding a Sundance well in the Lance Creek Field, and Rocky Mountain Gas Co. has made a location for a gas well on the Oregon Basin structure in Park County.

One new location was made in the Cut Bank Field in Montana. There were no completions and drilling is at a low ebb in the State on account of the weather.

NEW MEXICO

The monthly sale of oil and gas leases on state land held at Santa Fe on January 10, by Frank Vesely, commissioner of public lands, in which 36 tracts comprising 36,762 acres were offered, resulted in high bids on 29 tracts, comprising 28,486 acres, for an aggregate of $37,449.51. This includes four tracts for which there were no bids, but which were sold for the advertised minimum after the sale. There were seven tracts for which there were no bids or subsequent sales, Nos. 10, 24, 25, 30, 32, 34, and 35. Tracts offered and highest bids were as follows:

Tract 1, 1,465 acres in Sections 1, 2, 4, 5 and 6-11s-35, Humble Oil & Refining Co., $1,832.18.

Tract 2, 1,000 acres in Sections 17, 20 and 24-11s-35, Humble Oil & Refining Co., $1,250.

Tract 3, 1,280 acres in Sections 22, 23 and 24-11s-35, Humble Oil & Refining Co., $1,600.

Tract 4, 1,158 acres in Sections 19, 21, 28 and 29-11-36, Skelly Oil Co., $1,945.86.

Tract 5, 1,075 acres in Sections 31, 32, 33 and 34-11-36, Devonian Oil Co., $1,130.

Tract 6, 918 acres in Sections 4, 5, 6 and 9-11s-37, Phillips Petroleum Co., $806.

Tract 7, 800 acres in Sections 3, 9 and 10-12s-38, Carp P. Butcher, Midland, Tex., $321.

Tract 8, 1,240 acres in Sections 14, 15, 16, 21, 22 and 23-12s-38, Cary P. Butcher, $621.

Tract 9, 1,279 acres in Sections 35 and 36-13-34 and 31-13-35, Humble Oil & Refining Co., $703.47.

Tract 11, 3,096 acres in Townships 11 and 12s, Ranges 38, 34 and 35e, Skelly Oil Co., $3,622.44.

Tract 12, 1,707 acres in 11 and 12s-38, 34 and 35e, Cary P. Butcher, $2,666.66.

Tract 13, 6,381 acres in 11 and 12s-38, 34 and 35e, Ed W. Owen, San Antonio, $4,404.

Tract 14, 400 acres in Sections 32-19-30 and 2-20-30, Barnsdall Oil Corp., $1,656.72.

Tract 15, 440 acres in Sections 32 and 36-20s-30, George N. Espe, Santa Fe, $110.

Tract 16, 600 acres in Sections 32-19-31 and 36-19-30, Neil H. Wills, Roswell, $306.10.

Tract 17, 1,000 acres in Sections 2 and 16-19s-32, Humble Oil & Refining Co., $2,650.

Tract 18, 838 acres in Sections 2-20s-32 and 36-19s-32, Stanolind Oil & Gas Co., $3,257.16.

Tract 19, 120 acres in Section 16-20s-31, Texas Co., $427.20.

Tract 20, 400 acres in Section 36-20s-32, Stanolind Oil & Gas Co., $2,110.

Tract 21, 400 acres in Sections 4 and 5-18s-28, R. S. Magruder, El Paso, Tex., $100.14.

Tract 22, 640 acres in Sections 7 and 14-13s-36, Devonian Oil Co., $335.

Tract 23, 680 acres in Sections 14, 17 and 23-13s-36, Barnsdall Oil Corp., $170.

Tract 26, 280 acres in Sections 33 and 34-17s-36, Phillips Petroleum Co., $290.

Tract 27, 122 acres in Sections 2 and 3-17s-37, Barnsdall Oil Corp., $683.75.

Tract 28, 160 acres in Section 16-17s-38, Barnsdall Oil Corp., $511.28.

Tract 29, 160 acres in Sections 32-19s-33 and 4-20s-33, Empire Gas & Fuel Co., $360.

Tract 31, 240 acres in Sections 8 and 17-21s-35, R. S. Magruder, $240.

Tract 33, 480 acres in Sections 25 and 36-22s-34, Skelly Oil Co., $1,617.60.

Tract 36, 320 acres in Section 30-25s-38, Gypsy Oil Co., $1,722.

Cooper Area

Humble Oil & Refining Co.'s No. 3 Cooper, C SW SE Section 14-24-36, at the north end of the tier of north-south wells which appear to be near the eastern edge of the pool, was deepened to 4,100 feet with no change in the results indicated at higher levels. It is the deepest well in the pool. A drill stem test at 3,718-3,888 feet showed 1,150 feet of sulphur water. At 3,911-4,013 feet and 4,000-4,100 feet it was dry. It is shut down for orders. Tests at 3,485-3,570 feet showed no oil, gas or water, but at 3,594-3,697 feet there were 1,260 feet of sulphur water.

Humble Oil & Refining Co. has released a location for No. 2 Coats, CWL NW NE Section 10-24-36, 400 feet west of its No. 1 Coats, which has been unable to make any progress since it caught fire and went wild two months ago. No. 2 Coats will be drilled as relief well for No. 1 Coats, which is shut down at 3,355 feet.

Three new locations were released in the Cooper Pool: Phillips Petroleum Co.'s No. 11 Woolworth, C SE NW Section 26-24-36, building rig, and No. 12 Woolworth, C NE SW Section 26-24-36, digging cellar and pits. Amerada Petroleum Corp.'s No. 2 Everett, C SE SW Section 26-24-36, is building rig. These locations fill the gap between the wells in the north and south ends of the producing area and make a string of wells 3 miles long in the center of forties running north and south.

Continental Oil Co.'s No. 15-A Vaughn-1, C SE SE Section 15-24-36, began spudding January 2 and cemented 10¾-inch on bottom at 257 feet, in red beds, with 150 sacks, and is waiting. Same company's No. 14-A Vaughn-1, C SW SW Section 14-24-36, began spudding January 5 and cemented 10¾-inch on bottom at 258 feet with 150 sacks. Simms Oil Co.'s No. 1 Woolworth, C SE NE Section 35-24-36, is drilling at 3,406 feet in lime. Stanolind Oil & Gas Co.'s No. 4-A Meyers, C NE SW Section 22-24-36, is bottomed at 3,393 feet in lime and set 9⅝-inch at 3,188 feet with 575 sacks, and its No. 5-A Meyers, C NW NE Section 22-24-36, cemented 9⅝-inch at 3,076 feet with 775 sacks. Texas Co.'s No. 2 Ogg, C NW NE Section 35-24-36, had 10,000,000 feet of gas a day at 3,402-40 feet. The 9⅝-inch was cemented at 1,650 feet with 1,000 sacks. Same company's No. 3 Ogg, C SW NW Section 35-24-36, is drilling at 3,220 feet in lime, and its No. 4 Ogg, C NW NW Section 35-24-36, is digging cellar and pits. Same company's No. 5 Ogg, C NW SE Section 35-24-36, is building rig.

Eunice Area

Two completions, one near completion and one new location were reported in the Eunice Pool. Skelly Oil Co.'s No. 1-B State, C NW NW Section 16-21-36, which proves one unit to the east of Tidal Oil Co.'s No. 3 Coleman, made 221 bbls. of oil in 2½ hours, with 2,000,000 feet of gas, from the pay at 3,895-3,906 feet, after being treated with 2,000 gallons of acid. Total depth is 3,906 feet and the elevation is 3,606 feet.

Continental Oil Co.'s No. 17-A Meyers-4, C NE SW Section 17-21-36, one of four offsets in the center of the section, pumped 250 bbls. of oil and 80 bbls. of water the first 24 hours after treating with 1,500 gallons of acid. There was no gas with the oil. This well reached the present depth of 3,997 feet two months ago and considerable work was done on it in an effort to make it a producer.

Gypsy Oil Co.'s No. 2 Bell-State, C SE SE Section 8-21-36, an east offset to its No. 1 Bell-State, is a near completion. It was drilled to 3,916 feet and tested 228 bbls. the first 24 hours and 99 bbls. in the second period through the 2-inch tubing. The elevation is 3,606 feet. It is preparing to acidize.

Repollo Oil Co.'s No. 1 Adkins, NW cor. SE Section 9-21-36, is moving in materials.

Amerada Petroleum Corp.'s No. 1-D State, C NW NW Section 1-20-36, topped the brown lime at 2,632 feet and is drilling at 2,785 feet in lime and anhydrite. The elevation is 3,590 feet. General Crude Oil Co.'s No. 1 State, C NW SW Section 32-21-36, spudded to 70 feet, set 15½-inch on bottom with 50 sacks and is moving in rotary. Atlantic Oil Co.'s No. 1-C State, C SW SE Section 5-21-36, set 15½-inch at 72 feet with 500 sacks and is waiting for rotary. Skelly Oil Co.'s No. 1-C State, C NE NW Section 29-21-36, is drilling at 3,430 feet in lime. Continental Oil Co.'s No. 8-A Meyers-3, C SW SW Section 8-21-36, is drilling at 2,409 feet in anhydrite, and

Several Wells Testing in Turner Valley; Some Oil and Gas in Aldersyde Test

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Jan. 19.—In the South Turner Valley Field, Pacalta Oils' No. 1, LSD 7, Section 28-18-2w5, has finished at 465 feet in the lime, bottoming at 5,500 feet, and is testing. After rotary equipment was pulled, the well started blowing by heads, and the crew has been blowing the well down to clear it of drilling fluid. It finished with a 5⅝-inch hole in the limestone and shows a good wet gas flow, with initial naphtha recovery estimated around 150 bbls. a day. Further south and east, Carleton Royalties' No. 1, LSD 2, same section, is being blown regularly and getting about 120 bbls. a day naphtha recovery from the upper horizons of the Madison, the lower porous lime being frozen off. In the southeast corner of the section, Spooner Oils' No. 5 Anaconda, LSD 1, Section 28-18-2w5, which got the lime at 5,514 feet, is below 6,224 feet with a little more gas, and deepening. In the northeast corner, Director Royalties' No. 1, LSD 16, is increasing its initial production of around 100 bbls. a day.

In the same section, Publix Oil & Gas Co.'s No. 1, LSD 8, is redrilling below 4,750 feet and carrying 8⅝-inch casing. Crude oil production from the upper horizons is being taken while drilling. It is expected to get the limestone a little below 4,900 feet.

In the far south end of the Turner Valley Field, Highwood-Sarcee Oils, Ltd., has tentatively located its No. 2 not far from No. 1 producer in LSD 16, Section 21-18-2w5.

Commonwealth Petroleums

Shareholders of Commonwealth Petroleums, Ltd., at Calgary recently elected the following officers: President, D. J. Young, Calgary; vice president, R. J. Hutchings, Calgary; directors, Edward Michener, Ottawa; S. A. Annand, Calgary; W. A. Sharpe, Winnipeg. The company some months ago sold its producing well and acreage in Section 9-19-2w5, South Turner Valley, to Royalite Oil Co. for 6,000 shares of Royalite stock. The company holds acreage near the Pekisko well in southern Alberta and in South Turner Valley, and an interest in gas acreage and operations in the Lanoraie district of Quebec.

Aldersyde Deep Test

On the Aldersyde structure, east of Turner Valley, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-28w4, is shut down at 6,263 feet after a partial bailing test. Some gas and oil is coming into the hole. The gas is a wet gas, samples testing from .302 to .326 imperial gallons per 1,000 feet. Analysis shows the following percentages: Carbon dioxide, 1.4; oxygen, 0.2; methane, 71.6; ethane, 23; nitrogen (by

(Continued on Page 74)

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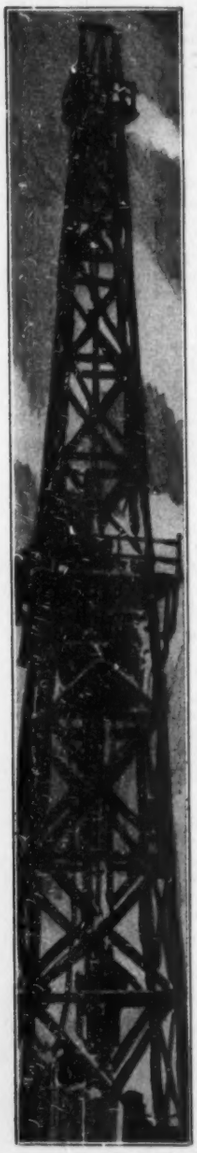

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its No. 18-A Meyers-1, C NE NE Section 18-21-36, began spudding January 2, set 10¾-inch at 346 feet with 150 sacks, and is drilling at 1,065 feet in red beds. Same company's No. 30-A Lockhart-1, C SE NE Section 30-21-36, is drilling at 3,873 feet in lime.

Tide Water Oil Co.'s No. 3 State-Foster, C NW NE Section 8-21-36, set 9⅝-inch at 1,533 feet with 450 sacks and is drilling at 2,857 feet in lime. Same company's No. 4 Coleman, C SE NE Section 17-21-36, which has been plugging back from 3,943 feet to shut off water, again plugged back from 3,927 feet to 3,915 feet and swabbed dry. It was treated with 1,500 gallons of acid and is waiting. Shell Petroleum Corp.'s No. 1-A State (formerly No. 1 State-Endura), C SE NE Section 12-21-35, was deepened to 3,959 feet in lime and swabbed dry. It is coring. Same company's No. 1-B State, C NW NW Section 29-21-36, is drilling at 1,470 feet in salt. Gypsy Oil Co.'s No. 1 Houston, C SE SE Section 7-21-36, is rigging up rotary, and its No. 3 Bell-Ramsey, C SW SW Section 9-21-36, is moving in rotary. Atlantic Oil Co.'s No. 1-F State, C SW SW Section 29-21-36, plugged back from 3,977 feet to 3,950 feet where it had 1,500 feet of fluid in the hole and is preparing to swab. Peerless Oil & Gas Co.'s No. 1 State, C NW SW Section 29-21-36, which swabbed 400 bbls. of fluid, of which 35 per cent was oil, at 3,962 feet, total depth, treated with 4,000 gallons of acid and is preparing to swab.

Hobbs Area

Gypsy Oil Co.'s No. 1 North Grimes, SW cor. Section 21-18-38, an outside well on the east side, which flowed at the rate of 1,056 bbls. a day through 3-inch tubing at 4,219 feet, total depth, before acidizing, was treated with 2,000 gallons and flowed at the rate of 4,020 bbls. open and 3,696 bbls. through the tubing. It was retreated with 3,000 gallons and is waiting for test.

Amerada Petroleum Corp. and Skelly Oil Co.'s No. 1-E State, NE SW NW Section 24-18-37, cemented 9⅝-inch at 2,821 feet with 450 sacks and is waiting. J. P. Cusack and others' No. 1 Moon, SW cor. NE Section 28-18-38, is drilling at 3,028 feet in anhydrite, and Shell Petroleum Corp.'s No. 2 Sanger, SW SE SW Section 27-18-38, is drilling at 3,705 feet in anhydrite. Continental Oil Co.'s No. 2 Grimes, SE SE Section 28-18-38, cemented 5½-inch on bottom at 4,015 feet, in lime, with 300 sacks, and is waiting.

Jal Area

Location for an important test in the Jal area was released in Phillips Petroleum Co. and Pure Oil Co.'s No. 1 Worth, C NE NE Section 3-25-36, 1½ miles northwest of the nearest producer in the Jal Pool and three-fourths of a mile southwest of the nearest producer in the Cooper Pool. It is a key well which may determine definitely whether the two pools are one continuous structure as is now generally considered.

Repollo Oil Co.'s No. 2 Hanagan, NE cor. SW Section 12-25-36, is a near completion at 3,347 feet, total depth. The 7-inch was cemented at 3,327 feet with 375 sacks and it is running tubing to test.

R. H. Henderson and others' No. 1 Langley, C SE SE Section 8-25-37, 2½ miles east of production, which spudded to 15 feet with machine, is building rotary rig. Southern Petroleum Exploration Co.'s No. 2-A Ascarate, C SE NW Section 24-25-36, is shut down at 2,844 feet in anhydrite. Continental Oil Co.'s No. 13-A Sholes-2x, NW cor. SE Section 13-25-36, is trying to loosen drill stem at 3,232 feet. Same company's No. 12-A Wells-2, C NW NE Section 12-25-36, which plugged back from 3,578 feet, total depth, to 3,490 feet, has 1,400 feet of oil in the hole, with 500,000 feet of gas, and is testing shutoff.

Lea Area

Texas Co.'s No. 4-A Lynch, C SE NE Section 34-20-34, one-third of a mile northeast of the discovery and the same distance southeast of No. 3-A Lynch, a producer, was plugged and abandoned at 3,797 feet, total depth. It narrows the Lea Pool on the north to less than three-fourths of a mile in width. It had 700 feet of sulphur water in two hours at 2,795-97 feet. It was estimated good for 10 bbls. of oil and 5 bbls. of water a day at 3,758 feet. The limits of the North Lea Pool on the southwest appears to have been found in Texas Co.'s No. 1 Elliott, C NE NE Section 22-20-34, two-thirds of a mile southwest of No. 1 Lea, the discovery well. It was drilled to 3,815 feet, in lime, and had 3,100 feet of sulphur water at 3,792-3,808 feet. It also had water at 3,753-58 feet and an increase at 3,775-3,800 feet. It is shut down for orders. Same company's No. 1 Swearingin, C NE SW Section 8-20-34, is drilling at 3,440 feet in lime, and its No. 1 Moore, C NW SE Section 21-20-32, west of Lea, is drilling at 930 feet in anhydrite. Ryan Consolidated Petroleum Corp.'s No. 1 Acree, C NE NW Section 35-20-32, is drilling at 205 feet in red beds. R. H. Henderson and others' No. 1 Russell-Steele, C NE NW Section 24-20-33, is drilling at 245 feet in red beds.

San Simeon Area

Humble Oil & Refining Co.'s No. 1 Saunders, C NE NE Section 4-22-34, began spudding January 6.

Maljamar Area

Maljamar Oil & Gas Co.'s No. 4 Baish, NE SE NE Section 21-17-32, is drilling at 3,913 feet in lime and about 100 feet off the objective.

Eddy County

One completion in Eddy County was reported, Pecos Valley Gas Co.'s No. 10 Vandagriff, E NW NE Section 8-17-28, which made 1,250,000 feet of gas, initial production, from the pay at 1,329-36 feet, the latter being the total depth. No oil was encountered. The elevation is 3,564 feet.

Pecos Valley Drilling Co.'s No. 1 State, NE NW NW Section 32-24-27, Black River district, in the southern part of the county, was abandoned at 2,398 feet, total depth. It had an oil show at 2,100-05 feet and a hole full of water at 2,105-2,398 feet. Location is about half a mile to the west and a little south of Stovall & Marshall's No. 1 Mock, which made 10 bbls. in two days at 2,369 feet.

Neal Wills and others' No. 1 Montgomery, SW NE Section 10-23-30, Salt Lake district, is drilling at 2,640 feet in anhydrite. Flynn, Welch & Yates' No. 71 State, C SW NE Section 10-19-28, Artesia area, is drilling at 1,260 feet in anhydrite, and Getty Oil Co.'s No. 7 Dooley, SW cor. NW Section 24-20-29,

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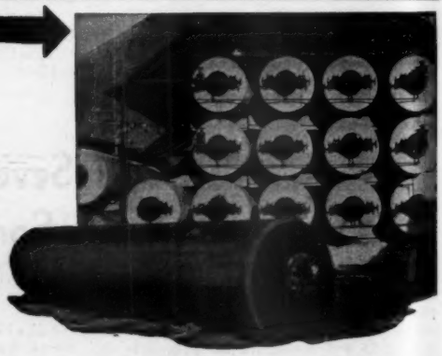
21

HIGH PRESSURE HAMMER WELD

TANKS



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Getty Pool, began spudding January 7 and is drilling at 110 feet in sand. Harry Leonard and others' No. 1 Nunler, C NW SW Section 27-16-30, North Jackson district, set 8¼-inch at 995 feet, had water at 2,240-45 feet and is drilling at 2,245 feet. A. & M. Petroleum Co.'s No. 1 State, SW NE Section 15-21-27, Carlsbad district, is drilling at 1,425 feet in lime. Skelly Oil Co.'s No. 1 Dow, C SW SE Section 15-17-31, Maljamar district, topped the anhydrite at 210 feet and set 10¾-inch on top of the salt at 668 feet with 50 sacks and is drilling at 2,135 feet in anhydrite.

Roosevelt County

Claudell Development Co.'s No. 1 Wilmes, C SW SE Section 21-2s-30, Pomeroy district, had 600 feet of salt water at 3,330-33 feet, and is moving in 6¼-inch at 3,360 feet.

Chaves County

Comanche Drilling Co.'s No. 1 Sloop-Purcell, NE cor. SE Section 10-11s-26, Roswell district, had a show of oil at 1,373 feet and is drilling at 1,417 feet in lime. C. J. Franks and others' No. 1 Roswell Insurance, NE cor. SE Section 30-11-25, swabbed 1 bbl. of oil an hour at 996 feet, total depth, after treating with 1,000 gallons of acid.

COLORADO

Archuleta County

No report was received this week from Oil City Petroleum Co.'s No. 1-A Garnett, SW Section 25-33-2e, Price district, which was due to drill into the sand about January 15 at 970 feet. A heavy snowstorm has interfered with communications and it is not known whether drilling was resumed after cementing pipe and erecting tankage. Trains were stalled by snow on Cumbres Pass in that district.

Moffat County

Stanolind Oil & Gas Co.'s No. 35-SD Parkinson, SE cor. NE Section 22-4n-92, Iles Dome, is rigging up.

Park County

South Park Oil Co.'s No. 1 State, SE cor. SW Section 16-11-75, Hartsel district, set 10-inch at 775 feet and is drilling at 810 feet.

Prowers County

Trojan Oil & Gas Co.'s No. 1 Lotus Oil, NW NE NE Section 15-23-46, Lamar district, is fishing for bit at 4,596 feet.

WYOMING

Big Horn County

Peter Evanoff's No. 1 Griffin, Lot 60, Section 4-55-97, Garland district, which several weeks ago was reported showing for approximately 10,000,000 feet of gas a day, has cemented 6⅝-inch at 1,510 feet with 150 sacks and is preparing to test. Total depth is 1,594 feet. Ohio Oil Co.'s No. 1 Hoskins, SW cor. Section 14-56-97, Byron district, is drilling at 4,414 feet. Yale Oil Corp.'s No. 1 Blakesley, NE NW Section 28-49-91, Bonanaza district, is drilling at 251 feet.

Carbon County

Argo Oil Co.'s No. 1 Johnson-Union Pacific, NE cor. SE Section 5-24-87, O'Brien Springs, is drilling at 3,140 feet in shale with the Sundance as the next objective. The Dakota at 3,059-72 feet had water and the Lakota at 3,076-3,130 feet, had water with a show of oil. The 9⅝-inch is at 3,053 feet.

Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-83, Overland Dome, is rigging up rotary equipment with left hand drill pipe to recover 1,000 feet of 4¾-inch which parted and dropped. Hole is bottomed at 5,931 feet in sand. It bailed 75 bbls. of oil and has some water, but source of the water is not definitely known. Same company's No. 1 Whitford, SW SE SE Section 24-20-84, is drilling at 2,100 feet in new hole. Ohio Oil Co.'s No. 1 Morris, C NW SE Section 6-20-77, Diamond Dome, is drilling at 5,472 feet, and its No. 1 Kyle, NE SE NE Section 26-21-79, Medicine Bow, is drilling at 3,197 feet.

Fremont County

Mid-American Oil Co.'s No. 2 Government, C NE SW Section 14-28-92, Sheep Creek, is drilling at 1,654 feet.

Lincoln County

Senrab Oil Co.'s No. 3 Government, SE NW Section 10-26-113, La Barge district, is drilling at 1,012 feet. Water is leaking through the 6¼-inch at 600 feet.

Niobrara County

Ohio Oil Co. is starting a Sundance well in the Lance Creek Field in its No. 1 Rohlf, NE SE Section 32-36-65, which is drilling at 130 feet. Rocky Mountain Drilling Co. has the contract. The company has two producers in the Sundance in the field, both of which have been shut in since completion several years ago. Recently the company contracted 1,000 bbls. a day to Consolidated Oil Corp. for the refinery at Parco.

Park County

Rocky Mountain Gas Co.'s No. 1 Oregon Basin Oil & Gas Co., C SW NW Section 32-51-100, south dome of the Oregon Basin Field, is a location. It will be drilled to the Frontier at 1,800 feet for gas. The company is laying a 3-mile 2-inch line from the Dry Creek Oil & Gas Co.'s well in Section 9-50-100, to a connection with the Cody line and will take the gas. Garland Oil Co.'s No. 2 Government, SE NE NW Section 14-56-98, set the 9⅝-inch at 1,701 feet.

Niobrara County

Interstate Oil & Refining Co.'s No. 1 Morrell, NW NE SE Section 2-39-61, West Mule Creek, is drilling at 3,050 feet. It had 2,800 feet of water at 2,975 feet.

Sheridan County

Beaver Creek Oil Syndicate's No. 1 Allison, SW SE Section 15-55-85, Beaver Creek, is drilling at 2,634 feet.

Washakie County

Chris Oil Syndicate's No. 1 Government, C SW SW Section 31-48-90, Hidden Dome district, cemented 8¼-inch at 1,598 feet. Water broke in and will be shut off with the 6¼-inch.

Weston County

Conway Oil Corp.'s No. 1 Government, C SE NW Section 7-41-60, Dewey district, is drilling at 1,172 feet.

MONTANA

Glacier County

One new location was reported in the Cut Bank Field, Montana Power Gas Co.'s No. 1 O'Brien, C SE SE Section 31-34-5w, which has rig on location.

Indian Oil Co.'s No. 1 Reickhoff, SW SE Section 3-34-6w, which drilled sand at 2,905-10 feet two weeks ago and shut down without testing, had 2,000 feet of oil in the hole when operations were resumed and swabbed down, making 80 bbls. It will drill deeper. A. B. Cobb's No. 4 Walberger, SE cor. Section 35-35-6w, is drilling ahead at 2,720 feet. Fist and others' No. 1 Donen, Lot 10, Block 11, Section 12-33-6w, is preparing to run 10¾-inch to bottom at 596 feet. It topped the Colorado at 592 feet. The elevation is 3,761 feet. Marshall and others' No. 1 Wilkins, NE SE NE Section 12-33-6w, is drilling at 1,650 feet, and Bruce Radigan's No. 1 Connolly, NW SW NW Section 7-33-5w, began spudding January 9. Watson and others' No. 1 Miller, W NW NE Section 1-33-6w, is drilling at 1,800 feet, and Wickstrand & Walgren's No. 1 Simero, Lot 5, Block 17, Section 12-33-6w, set the 10¾-inch at 587 feet.

Cascade County

Ralph Chamberlain and others' No. 1 Heldman, near C SE Section 6-19-2w, Crown Butte district, had the Sunburst sand at 2,275-2,326 feet and is shut down at 2,329 feet. It probably will be abandoned.

Big Horn County

Enterprise Oil Co. and others' No. 2 Lynde, SW cor. SE Section 21-6s-35,

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Lodge Grass Creek, is reported abandoned without plugging at 3,621 feet. The 4½-inch collapsed 200 feet off bottom several weeks ago.

Fergus County

Button Butte Oil & Gas Co.'s No. 1 Woodward, SE cor. SW Section 20-14-24, Button Butte district, is drilling in the Devonian at 3,025 feet. It will go to 3,100 feet before plugging back to test a show of oil at 2,752-3,006 feet. Hole has 2,300 feet of water.

Pondera County

W. M. Fulton and others' No. 1 Price, C NE NE Section 18-27-4w, one-fourth of a mile northwest of the nearest producer, is a location. Conrad Refining Co.'s No. 2 Gjillin, NE SW Section 11-27-4w, is shut down at 196 feet.

Toole County

W. M. Fulton and others' No. 1 Halter, NE cor. SE Section 17-35-2w, Kevin-Sunburst Field, is a location. Pfabe-Engelking's No. 7 Seabrook, SW SE NE Section 30-35-2w, is shut down at 1,510 feet and probably will be abandoned. It had a small show of gas in the Sunburst at 1,220-40 feet and water in the top of the Madison at 1,505 feet.

Canadian Fields

(Continued from Page 71)

difference), 3.8. Like the Turner Valley naphtha, this wet gas contains some sulphur.

Tests in the Foothills

In the Forest Reserve area west of Olds, Hunter Valley Oil Co.'s No. 1 McLaren, LSD 12, Section 18-31-10w5, is standing at 4,814 feet.

Senator Oils, Ltd., of Ottawa, is negotiating for completion of Cartier-Majestic's No. 1 joint test in LSD 3, Section 36-31-7w5, on the Monarch structure, considerably east of the Hunter Valley structure. Cartier-Majestic's No. 1 has been standing at about 1,460 feet.

On the Watson structure, in the southern foothills west of Lundbreck, Mar Jon-Moxmont's No. 4, LSD 10, Section 20-9-2w5, is reported below 1,700 feet, with some small oil and gas shows. Mar Jon Oil Co.'s No. 3, LSD 3, Section 4-10-2w5, is at 740 feet waiting to run cement. It bottoms at this depth in the cardium sandstone marker which in the Turner Valley Field is usually encountered around 1,750-1,800 feet. On the same structure, Raven Oils' No. 1, LSD 1, Section 20-9-2w5, is standing at 1,300 feet.

Border Fields

On the Cardston structure, southern Alberta, Franco Oils' No. 1, LSD 3, Section 5-3-25w4, is below 1,500 feet.

On the Rickert structure, west of Turner Valley, Paramount Oils' No. 1, LSD 2, Section 28-18-4w5, is below 3,533 feet.

On the Highwood-Sinclair structure, south of Turner Valley, Canadian Royalties' No. 1 Banner, LSD 6, Section 34-17-3w5, is below 718 feet.

British Columbia Drilling

In the Fraser Valley area of British Columbia, Natural Gas Development Corp.'s No. 1 in the Boundary Bay district, 25 miles from Vancouver, has a small gas show at 615 feet and is deepening. It is logging closely with the old Boundary Bay Oil Co.'s No. 1 deep test which got a gas flow approximating commercial production around 1,400 feet. Everett Borders is drilling contractor.

Shareholders of the Okanagan Oil & Gas Co. at their annual meeting at Kelowna, British Columbia, elected the following directors: J. E. Reekie, A. V. Surtees, G. S. McKenie, G. D. Herbert and W. Lloyd-Jones. Tentative arrangements were made to deepen Okanagan's No. 1, E half Section 2-26 Osoyoos Survey, standing at 2,740 feet.

Quebec Gas Project

In the province of Quebec, St. Lawrence North Shore Gas Syndicate has been organized at Stratford, Ontario, to drill for gas on the north shore of the St. Lawrence between Montreal and Three Rivers. The company holds two blocks totaling 2,367 acres not far from the location where the Carl M. Mohr Syndicate encountered gas in the Trenton limestone at 1,200 feet. St. Lawrence North Shore's No. 1 will spud early this year. J. W. Westervelt of London, Ontario, and G. B. Macfarlane of Stratford are joint managers.

Ontario Drilling

In the Hepworth area, Bruce County, Ontario, Nottawa Oil & Gas Co. of Toronto, headed by A. B. Holmes, has finished No. 1 gasser in Amabel Township, and is finishing No. 2 near Shallow Lake. Production comes from the Trenton limestone at around 1,425 feet. If sufficient production can be secured it is intended to pipe the gas to Owen Sound, Wiarton and neighboring communities.

The Holmes interests through Otterville Natural Gas Syndicate No. 1 have drilled a number of gassers in Rainham Township, Haldimand County. Production is being taken by the Dominion Natural Gas Co. Otterville Syndicate No. 2, also organized by the Holmes interests, has secured two producers in Walpole Township, Haldimand County. Otterville Syndicate No. 3 has finished two gassers and is drilling three more tests in Haldimand County.

Drilling is being continued by the Domestic Gas Syndicate of Toronton in Seneca and Oneida Townships, Haldimand County, on holdings approximating 1,000 acres. Six wells have been finished with an aggregate open flow of 650,000 feet a day. The gas is contracted to the Dominion Natural Gas Co. Sovereign Gas & Oil Syndicate of Toronto has finished No. 1 gasser about 1¾ miles west of Selkirk, in Haldimand County, and is drilling No. 2. The company has 285 acres under lease in the Selkirk area. Lynn Valley Natural Gas Syndicate has finished a well good for 55,000 feet a day, and another is drilling. Sterling Gas Co. of Toronto has financed for the drilling of 10 or more shallow tests for gas on its acreage in the Haldimand Field.

In Norfolk County, Erie Gas, Ltd., has finished four gassers with aggregate open flow of around 500,000 feet a day on its 175-acre tract in Woodhouse Township. Production is sold under 10-year contract to the Dominion Natural Gas Co. The company also has about 1,600 acres leased in the Tillsonburg area of Norfolk County. Empire Natural Gas' No. 13 in Norfolk has finished with approximately 100,000 feet a day initial production. No. 14 in the same field is spudding. Dominion Natural Gas Co. is taking the production.

In Brant County, Randolph Syndicate's No. 2 on the Walter G. Brown farm, Onondaga Township, 6 miles from Brantford, has finished as a fair shallow gasser with 142 pounds pressure.

Southwestern Fields

In the Dover Field, Kent County, Ontario, Prairie Oil & Gas Co.'s No. 2, Stephens farm, Lot 2, Front Concession, Dover East Township, bottoming at 3,400 feet, was shot above the break in the Trenton limestone, with 500 quarts. Ajax Oil & Gas Co.'s No. 10 has been spotted on the Johnston farm, 1,200 feet north of No. 9, which got a large gas production, reported 4,500,000 feet a day from the Trenton limestone. Prairie Oil & Gas Co. will probably start a third deep test.

In the De Clute Field, Raleigh Township, Kent County, Gas Producers Syndicate's No. 3 has been located on the Gilbert Pardo lease, about 1,100 feet south of No. 2 gasser and 250 feet from the west line of the lot. Gas Producers' No. 2 finished with 5,500,000 feet a day from two sands. Union Gas Co.'s No. 27 has been located offsetting Gas Producers' No. 2.

In the Eden Field, Middleton-Norfolk Gas Co.'s No. 2, Vernon McDonald farm, Lot 5, Concession 3, North Talbot Road, Middleton Township, is rigging, south and east of No. 1. Basal Sunda has the contract.

Lambton Deep Test

Fred H. Merritt, of Sarnia, Ontario, formerly of Duluth, is arranging to test the shallow oil area of Lambton County. The potential area comprises Lambton County, the western part of Middlesex and the northern part of Kent County, within which lie the Petrolia, Oil Springs, Bothwell and Mosa shallow fields, with some smaller producing areas. The normal formations, beginning at the surface, are: Drift, 100 feet; Huron shales, 0 to 160 feet; Ipperwash lime; Petrolia shale; Widder (middle) lime; Olentagy shales; Delaware and Onondaga (corniferous) limes; Oriskany sand; Silurian formation; Utica shales and Trenton limestone. The corniferous lime is the great producing horizon of the shallow oil fields which have been producing some 75 years. At one time the Oriskany sand was regarded as the limit of oil possibilities; but later deep drilling disclosed the Salina, Guelph-Niagara, Clinton and Red and White Medina oil and gas horizons of the Silurian, with oil and gas possibilities also in the Trenton. All these horizons are believed present in the Lambton and adjacent area, but only a few isolated deep tests have been attempted.

TO DRILL IN NEBRASKA

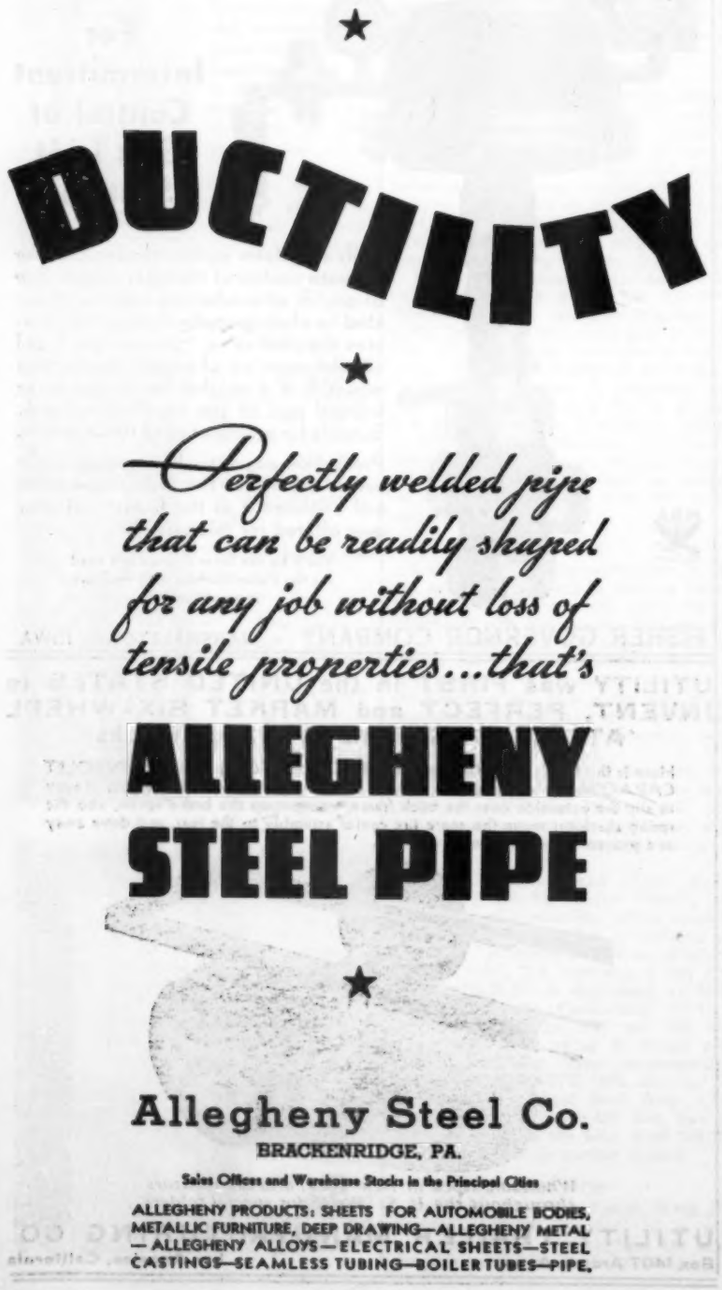
FREMONT, Neb., Jan. 21.—Drilling for oil near Fremont, it is reported, will be started within a few days by the Midland Oil Co., of Fremont. A contract has been let to I. W. Murfin, oil producer of Wichita, Kans., who will drill a test well 3½ miles southwest of Fremont on the farm owned by Mrs. Emma Forster.

CANADIAN GAS USERS

CHATHAM, Ontario, Jan. 19.—Official figures show that, though production is confined to four provinces of the Dominion, there are in Canada some 150 municipalities served with natural gas, with 134,710 meters. Manufactured gas is furnished in some 30 municipalities serving 513,033 meters.

A.S.T.M. STANDARDS INDEX

All of the A.S.T.M. standards, specifications and tests are conveniently listed under appropriate key words and subjects arranged alphabetically in the booklet of 142 pages just issued. This publication will be of value for locating adopted specifications or test methods on specific materials. Copies may be obtained without charge from the Society Headquarters, 260 South Broad Street, Philadelphia.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TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential.

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Half-Second Nitrocellulose for Naphtha Solvent Test

I am trying to gather all the available information about the tests applied to the special naphthas that are used as solvents. The dilution ratio test requires one-half second nitrocellulose. What is this? How is it handled? What is the market price? —W. C. F.

There are several varieties of nitrocellulose, which, because of the large quantity required in the manufacture of lacquers, is usually classified according to solubility in specified solvents. Each general type may be obtained under several viscosities. The important property of nitrocellulose is the nitrogen content, which influences solubility, but products having the same nitrogen content may have different solubility characteristics. What the trade wants is a product which will form a clear solution in a solvent mixture containing as little as possible of the more expensive solvents and as large a volume of the cheaper diluents as possible.

Viscosity serves as a convenient and rapid method for the estimation of concentration. The viscosity classifications of different types of nitrocellulose are derived from the viscosity observations in seconds when made on a 16-ounce solution by the standard method of viscosity measurement. Nitrocellulose is made in grades ranging from one-fourth second to 1,000 seconds. Low viscosities may be changed from seconds to centipoises by multiplying seconds by 377.

The type known as RS nitrocellulose is the most suitable for use in mixtures of ethyl acetates, butyl acetates, etc., with petroleum naphtha or other hydrocarbons. The one-half second type, 105 to 140 centipoises for a 16-ounce solution, is furnished under the manufacturing limits of 3 to 4 seconds, determined in a 20 per cent solution with the falling ball method. Nitrocellulose is shipped wet with water or dehydrated, the latter being wet with 30 per cent alcohol. The one-half second grade is so marked on the package but in addition the viscosity in a 20 per cent solution is shown at 3 to 4 seconds. This means that the test solution for viscosity contains:

	Per cent by weight
Half-second nitrocellulose	30
No. 1 CD denatured ethyl alcohol	20
Ethyl acetate	16
Toluol	44

The weights of nitrocellulose are on the dry basis and one of the safe methods for drying it is to place the material in a glass cylinder, fixed in horizontal position, and draw warm air over it by means of an aspirator. Using air from an oven at 185° F., the ethyl alcohol form should be dried in four hours. Particular precaution should be observed to take care of the dust, as it is exceedingly inflammable.

The half-second nitrocellulose should be obtained from the dealer in chemicals or explosives in small quantities at about 40 cents a pound.

Details of the viscosity method are to be found in the first two references following:

References

Nitrocellulose — Hercules Powder Co., Wilmington, Del. A.S.T.M. Tentative Standards 1934, page 581. Tentative Methods of Test for Soluble Nitrocellulose Base Solutions; A.S.T.M. Designation 4 365-33T. American Society for Testing Materials, 260 Broad Street, Philadelphia, Pa. Circular No. 378, American Paint and Varnish Manufacturers Association, Washington, D. C.

Doctor and Copper Strip Tests for Sulphur and Corrosion

Which is the most sensitive test for the detection of free sulphur and corrosive sulphur compounds in natural gasoline, the doctor test or the copper strip corrosion test? In the copper strip test, what is the most widely used temperature, 122° F. or 212° F.?—W. H. H.

The doctor test is, in most cases, used for the detection of mercaptans, but will serve also for detecting any hydrogen sulphide that may be present in gasoline or kerosene. Mercaptans are objectionable because of the bad odor they impart to the product, their action to cause a gasoline to go off color in storage, and the tendency to cause corrosion of metal parts. A positive indication by the doctor test being a discoloration of the oil, yellow to orange, or the formation of a precipitate. The precipitate changing from orange to brown, finally black.

The presence of hydrogen sulphide is shown by the immediate formation of a black precipitate, which will mask the mercaptide precipitate. Hydrogen sulphide is more corrosive than mercaptans. The doctor test does not reveal the presence of any free sulphur, nor does it give any indication of the total sulphur content. There is some question that the very small quantity of mercaptans that may be found in a finished gasoline are corrosive.

The polished copper strip test, A.S.T.M. D-130-30, provides that the strip shall be completely immersed in the liquid and held at 122° F. for three hours. If the metal shows more than an extremely slight discoloration the gasoline shall be reported as not passing the test. Discoloration will be caused by hydrogen sulphide, free sulphur and other corrosive sulphur compounds. This test serves very well as a means for preventing the use of gasoline which may attack the metal of the automobile with which it comes in contact as a fuel and the products of combustion.

The 212 degrees temperature for a copper strip test is that required by the United States Government, as published in Technical Paper No. 323B, Bureau of Mines.

Probably the Bureau of Mines temperature is more widely used than the A.S.T.M. temperature simply because it requires less attention to maintain 212 degrees than 122 degrees. The objection to the higher temperature is that it is more severe and not well adapted to a volatile product.

Surface Tension of Petroleum Oils and Use of the Data

What is the application of the surface tension data of petroleum oils? I am interested to know what is the surface tension of motor oils? Please advise me where I can find a method for determining surface tension?—G. W. C.

The surface tension of petroleum liquids generally means the tension at their surface when in contact with air. There are several methods for making the determination.

Gurwitsch has reported results by the stalagmometric or drop method, which consists in the measurement of the drops issuing from an aperture of definite dimensions, as compared with water. A gasoline of 0.714 specific gravity or 66.7 A.P.I., gave 20 dynes and a lubricating distillate, 0.912 specific gravity, or 23.6 A.P.I., 31.9 dynes.

Francis and Bennett, by means of the du Nuoy tensiometer, studied the surface tension of crude oils and the primary petroleum products. This instrument serves to measure the force required to separate a loop of platinum wire from the liquid-air surface. Lubricating oils varied between 36 and 37 dynes. This method is described in the reference given below. See also Gurwitsch, Petroleum Z., 18, 1269 (1920).

The surface tension increases with the specific gravity and falls about 0.05 dyne with each Fahrenheit rise in temperature.

Surface tension is considered of value for the grading of hydrocarbon solutions of gums and resins. Gruse, page 75, Petroleum and Its Products, states: "The surface tension of a crude oil is of some significance with regard to the ease with which emulsions are formed. The variations between different crude oils are not large, however, and it is probable that a crude oil containing colloidally dispersed resinous and asphaltic compounds and inorganic silt is much more likely to emulsify that one free of colloidal material, but made up of hydrocarbons having a naturally low surface tension. It must, of course, be recognized that surface tension may be lowered by the adsorption of colloidal matter at the interfaces, and this influence undoubtedly plays a part in the emulsion-forming influence of asphaltic compounds."

References: Gruse, Petroleum and Its Products, pages 72-75; Gurwitsch-Moore, Petroleum Technology (new edition), page 203; Francis and Bennett, Ind. Eng. Chem., 14, 626 (1922).

Treating Certain Sulphur Oils With Copper Oxide

Will you kindly explain the use of copper oxide in refining petroleum and the way it is used?—J. M. F.

Copper oxide may be used for the reduction of the sulphur content of a petroleum oil in two ways, by adding it to the boiling liquid or by passing the vapors over the oxide. The important reactions being the combination of the sulphur with the copper to form the sulphide and the regeneration of the copper sulphide, by heating in the presence of air, to copper oxide. The sulphur passes off as sulphur dioxide.

The process was originally invented by Frasch for the purification of the illuminating oils made from the crude produced in the Petrolia Field, of Canada. Later, a similar oil was found near Lima, Ohio. This oil did not contain a large quantity of sulphur, a total maximum of about 0.75 per cent, but the odor was very objectionable, due to the form in which the sulphur was present. The known methods for refining burning oils failed to remove the bad odor, so the trade refused to purchase the oil until the product was improved by means of the Frasch process, about 1887.

The odor of this oil was found to be due to certain mercaptans (R.SH) which were converted to alkyl sulphides (R_2S) and copper sulphide (CuS) by the action of the copper oxide, as explained by:

(1) $2\ RSH + CuO \rightarrow (RS)_2Cu + H_2O$

(2) $(RS)_2\ Cu + CuO \rightarrow R_2S_2 + Cu_2O$

(3) $(RS)_2\ Cu \rightarrow R_2S + CuS$

Heat is necessary for (2) and (3). The actual removal of sulphur is equivalent to the quantity which combines to form the copper sulphide, the remaining sulphur is converted to an unobjectionable form, soluble in the oil.

The following is quoted from Gurwitsch-Moore, Pet. Tech., p. 365:

"De-sulphurization by Frasch's method is carried out by treating the oil with different metallic oxides, principally, as Lunge recommends, with a mixture of 75 per cent of CuO, 15 per cent of Fe_2O_3 and 10 per cent of PbO. This treatment can be carried out in two ways, either by the addition of the mixture of metallic oxides to the boiling crude oil in the still (the mixing process), or in such a manner that the vapors of the distillates are exposed to the action of the metallic oxides in specially constructed apparatus (the vapor process). In both cases the oxides are converted into metallic sulphides, from which the oxides may be afterwards regenerated by roasting. This process has been very successful in the treatment of oils containing sulphur in the uncombined state. The sulphur content of the distillate after Frasch's treatment falls from 0.75 to 0.08 per cent."

Important references are:

Ind. Eng. Chem. 4, 134 (1912).
U. S. Patents 378, 246, Feb. 21 (1888).
448, 480, March 17 (1891).
487, 119, Nov. 29 (1892).

NATURAL GAS DEVELOPMENTS

Largest Gas Well Found in New York Development

WELLSBORO, Pa., Jan. 21.—As if to make up for several uneventful weeks in the north central Pennsylvania and adjacent New York gas fields, operations in the week ending January 18, netted four producers, three of them ranging from a record breaking output of 50,000,000 feet in Greenwood Township, to an 8,000,000-foot well in Genesee Township and a 2,250,000-foot producer in Hebron Township. The fourth gasser was gauged at 150,000 feet in Belfast Township, Allegany County. In Clarion County, Pennsylvania, two oil wells were completed during the week, one for 4 bbls. and the other for 3 bbls. daily.

The Greenwood well, on the T. H. Wing farm, roared in as the largest gasser ever struck in New York State and enhances considerably the already important position of the Belmont Quadrangle Development in the Steuben County Field. Top of the Oriskany sand was reached at 4,737 feet, and the well was completed 1 foot in the sand. Drilling had been in prograss since November 7. Half a mile southeast of this well the Belmont company drilled a test which was drowned out by salt water on the Coston farm. About 1,000 feet northwest of the new well Wittmer completed a 14,000,000-foot gasser on the O'Horrigan farm in October. On state-owned land near the 50,000,000-foot producer, Empire Fuel & Gas Co. completed another 14,000,000-foot gasser. The record-breaking well was capped by C. F. Goble, Bradford drilling contractor.

In the Genesee Field, which is apparently developing into an extension of the famous Hebron Field, both in Potter County, Pennsylvania, Bayliss and others completed an 8,000,000-foot producer in the Oriskany at a depth of 4,009 feet on the Earl Pye farm. In the Hebron Field Lycoming got a production of 2,250,000 feet at a depth of 5,292 feet, on the R. and G. Carmer farm. A "shallow" test by Farnman on the Murray estate, Belfast Township, Allegany County, New York, was completed at 3,211 feet for 150,000 feet a day.

Oil well completions in Clarion County, Pennsylvania, were Alum Rock Gas Co.'s No. 1 Cummings, Ashland Township, drilled to 1,253 feet and pumping 4 bbls., and Bummer Oil & Gas Co.'s well on the A. Smith farm, Paint Township, drilled to 1,117 feet, and producing 3 bbls. from the Third sand, 1,049-61 feet, and Fourth sand, 1,091 feet. This well was to be cleaned out.

East Penn Development Co. is drilling by tools at 4,491 feet on the Presbyterian church property, Shippen Township, Tioga County, Pennsylvania. E. Cabot is shut down at 6,253 feet on the W. F. Burroughs farm, Gaines Township, same county. Hoping to increase production greatly, Sylvania Natural Gas Corp. is drilling deeper No. 2 John Higley, Hebron Township, Potter County, where a flow of 2,500,000 feet was encountered. The drill is now at 5,206 feet. Lycoming Natural Gas Corp. is shut down at 4,962 feet on the W. B. Hemphill farm, Hebron Township. Porter Development Co. is still idle at its No. 2 Penn State location in Hebron Field.

United Producers is drilling at 320 feet on the J. Ruppert farm, Hebron Township, Potter County. J. B. Reed is still shut down on the George C. Page farm, Allegany Township, Potter County. Updegraph is building rig on the O'Donald farm, Genesee Township, same county. Hanley & Bird is drilling at 345 feet on the Effie Slingerland farm, Allegany Township, Potter County. Penn United is building rig for its No. 2 B. L. Langworthy, Hebron Township, same county.

Higgins and others is drilling at 2,640 feet on the Steadman farm, Allen Township, Allegany County, New York. Cunningham is drilling at 1,550 feet on the Maxwell farm, Willimg Township, Allegany County, where the Elk was found at 1,331 feet. Harry Erwin is drilling at 2,450 feet on the Edward Fisk farm, Thurston Township, Steuben County. A. B. Button is shut down at 810 feet on the Earl Dodson farm, Junius Township, Seneca County. Trumbull is shut down at 900 feet on the W. B. Lasher farm, Throop Township, Cayuga County. Great Northern is shut down on the Van Orman farm, Briston Township, Ontario County. Walters & Haughey is drilling at 665 feet on its No. 2 Seth Allen, Tyrone Township, Schuyler County.

Peoples Natural Gas Co. Announces Promotions

S. J. Ratcliffe, assistant treasurer of the Peoples Natural Gas Co., Pittsburgh, Pa., has succeeded C. H. Rupp as treasurer. Mr. Ratcliffe entered the employment of the Manufacturers Light & Heat Co. in 1909 on a pipe line gang in West Virginia. He joined the Peoples company three years later and in 1921 was made chief clerk in the treasury department by President John B. Tonkin. He became assistant treasurer in July, 1933, upon the retirement of R. D. Beardsmore, treasurer.

H. Donald Berger, chief clerk of the treasury department, was appointed assistant treasurer to succeed Mr. Ratcliffe. He joined the company in 1922.

C. H. Rupp, the retiring treasurer, entered the employment of the Buffalo Gas Fuel Co. in 1898, going to Pittsburgh in 1904. He was appointed assistant treasurer of the Hope and Peoples companies in 1909, and July 1, 1933, succeeded Mr. Beardmore. Mr. Rupp is recovering from a severe illness at Coral Gables, Fla.

COLUMBUS, OHIO, ARGUMENT

COLUMBUS, Ohio, Jan. 21.—With counsel for both the city of Columbus and for the Columbus Gas Fuel Co. having concluded their arguments, the Ohio Utilities Commission may fix the gas rate for Columbus before February 1, the expiration of the term of office of Frank W. Geiger, member of the commission. If the rate is not fixed then, further delay seems likely until the newly appointed member acquaints himself with the case. The commission will fix a rate "somewhere" between 48 and 53 cents, the city contending for the 48-cent rate as non-confiscatory, while the gas company contends that anything below 55 cents would be confiscatory.

LACLEDE CUT SUSPENDED

JEFFERSON CITY, Mo., Jan. 21.—A 6 per cent reduction in domestic and commercial gas rates of the Laclede Gas Light Co. of St. Louis, ordered recently by the State Public Service Commission, has been suspended by Judge N. G. Sevier.

The decrease, which would have become effective February 1, was ordered impounded until final disposal of appeals by the company and city. The decrease, totaling approximately $350,000 annually, will be deposited in the Central Missouri Trust Co. of Jefferson City under the order.

Trade Commission Report on Holding Companies

Competition among holding companies to gain control of operating properties in the public utility field became so keen during the 1922-1932 decade that, in an extreme case, the successful bidder paid $472.03 per share for stock of a company which accountants of the Federal Trade Commission computed to have a book value of $2.97 per share, that commission says in another installment of its final report on its public utility investigation submitted to the Senate.

Commenting on the general limitations on competition, the commission says an important feature of the business of operating electric and gas utility companies is that they generally enjoy local monopoly, subject to state or local regulation as a means of preserving to the public so far as possible desirable economic results that competition might produce, and of avoiding the undesirable results that cut-throat competition was found to cause in the early days of these industries. Essentially, the monopoly consists generally of the exclusive right to serve a given area with electric energy or gas, or both. In recent years, the commission found, monopoly grants by local political units have been supplemented in some states by the requirement that before extensions shall be made into territory not already served, or construction begun for new facilities, a certificate of convenience and necessity must be obtained from the proper regulatory body.

The commission says the preference for regulated monopoly now shown by state and local regulatory bodies arises out of recognition that local monopoly yields economic advantages of larger scale production and distribution, elimination of duplicated investment in transmission, distribution and generating capacity, and of operating personnel that would be unattainable were two or more companies allowed to compete in the same territory. This preference for local monopoly, says the report, was attained by a process of gradual development. Originally there was local competition in many cities in both the gas and electric industries and in a few instances such competition still continues, but most of the competition that does remain, the commission finds, is for new territory, or for the purchase of facilities already operating, both of which are subject to varying degrees of control as provided by the laws of different states.

However, powers of the regulatory bodies in the various political subdivisions of the country do not extend to holding companies which are now dominant in the public utility field, the commission's report says:

"Holding companies that own and operate no properties are not classed as public utilities and, therefore, are not subject to regulation restricting competition among operating companies. In fact, a principal advantage from the viewpoint of management is the ease with which control of operating companies enjoying local monopolies may be acquired, exercised or disposed of by mere acquisition or disposal of voting stocks. Over such transactions there is practically no regulation attempted. Consequently, there has been keen competitive bidding in the past among holding company groups for control of electric and gas operating companies. Such competition is to be noted in buying up properties or stocks representing control of properties, and extending properties by construction of transmission and distribution lines to reach territory not previously served."

The report goes on to say that in the early stages of holding company development, the field was wide open for acquisition of control largely through buying common stocks or properties of operating companies. "Since 1920, however, as more and more operating properties came under the control of holding company groups, the problem has shifted a considerable degree to acquisition of control of holding companies. Thus a consolidation movement took place among holding companies somewhat analogous to that which took place earlier among operating properties. However, operating company consolidations were made with the object of creating larger operating properties to take advantage of efficiencies made possible by improvements in the industry, while holding company competition in its later years took the form on competition for greater and greater control, in some instances to create super-power systems, or to build up control for promotional or management purposes over great power combinations, sometimes of groups of properties widely separated territorially."

Lone Star Gas Dividend of Fifteen Cents a Share

The first cash dividend in 2½ years and the first in either cash or stock in approximately a year was declared by directors of the Lone Star Gas Corp. when a payment of 15 cents a share on the common was voted at a meeting in Pittsburgh. The payment is to be made on February 15 to stock of record January 25. In announcing the dividend, directors stated that their action was to be considered simply "a payment" and they are unwilling to venture any prediction as to when further "payments" will be made.

Declaration of the 15 cents a share cash dividend will mean the payment of $807,108 on 5,380,723 shares outstanding common stock of the corporation.

March 31, 1934, 16 cents was paid in the form of 6 per cent convertible preferred stock, although those who preferred actual cash received less than the 16 cents because of the rate of discount. The 16-cent quarterly preferred stock payments were begun by Lone Star on June 30, 1932, and were continued from that time until March 31, 1934, when all dividend payments on common were discontinued. In the quarter prior to June 30, 1932, a cash dividend of 15 cents was paid. This was a reduction from the 22 cents quarterly paid previously. In 1931 a total of 88 cents a share was paid and in 1930 the figure was $1.

In connection with the announcement of the 15 cents per share dividend payment, it was stated that officials of the Lone Star Corp. estimate the corporation's earnings for 1934 were a little better than in 1933, when the net for the common stock was $3,782,027, equal to 52 cents a share. This compared with 72 cents a common share in 1932, 75 cents in 1931, $1.30 in 1930, and $1.18 in 1929.

In addition to improved earnings estimated by officials for the past year, it is understood that all bank loans of the corporation have been liquidated, that officials are reasonably well satisfied with the outcome of pending rate cases or those recently concluded, and that the outlook for volume of business has been greatly increased with the opening of the Wisconsin market to the Lone Star Corp. through a recently completed line.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depths of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

Riser and Gauge on 16-Inch Line Give Rise to Some Questions

A picture appearing in your issue of December 13, 1934, page 13, has aroused my interest and I want to ask you a question or two about it. The picture, which shows how the pressure is tested on a 16-inch gas line of the United Natural Gas Co. in the Bradford Field, contains a valve on a header welded to the line. The purpose of putting such a valve on the line is not clear to me. What is it for? Also if it should be necessary to repair the valve, how could repairs be made, since the valve is on this header, welded to the line? —H. F. S.

The picture to which you refer does not show enough to make it certain whether this riser and pressure gauge are at the dead end of the pipe line, or whether the large pipe extends on beyond the hole. It would make considerable difference in handling repairs such as you suggest, but it is possible to answer your question in part at least.

The purpose of the riser and valve is to supply a convenient and safe way to add another pipe line to the system. If it is desired to deliver additional gas from this main line it would be a simple matter to screw or flange in the first joint of pipe for the extension line by connecting to the upper side of the valve. It is easy to figure out how this could be done mechanically, and as the riser and valve were put in place before the gas was turned into the line it was clearly the intention of the operators to provide a means of adding another line if needed.

Your second question about making repairs on the gate valve without allowing the pressure within the line to drop below 75 pounds is rather difficult to answer without assuming many things which are not made evident by the picture. In a way the question is contradictory because if it were really necessary to repair the valve it would be in such bad mechanical shape that it would probably be leaking and if leaking the line pressure would drop anyway.

If it should be necessary to repair this valve the simple thing to do would be to shut off the flow of gas through the main line by closing gates above this riser provided for this purpose, and do the job as quickly as possible. Everything should be made ready to take off the valve or to repair it in place as quickly as possible so that the system would not be down long. This could be done simply by the repair men, but it does not seem probable that they would attempt to make repairs on the line and maintain 75 pounds pressure within the pipe at the same time.

If low-pressure gas were flowing through the system it might be possible to remove the valve or repair it while the gas was permitted to escape through the end of the riser or out of the valve itself as the work was carried on. This would not be as safe as other methods, but men do work around wells that are flowing great volumes of gas and oil and have casinghead pressures up to 2,000 pounds per square inch.

In such cases heavy fittings are used and their weight assists materially in placing them over the end of the casing. In this instance if this is a 6-inch diameter pipe and the pressure in the line has to be maintained at 75 pounds per square inch the force directed against the under side of a blind flange, the only thing that would be practical to use to close the end of the riser after the valve had been removed, would equal 75 pounds multiplied by 28.7 (the area of the flange in square inches), or 2,120.25 pounds.

To handle the flange safely and place a gasket between the blind flange and the half of the flange remaining on the end of the riser would be a difficult and dangerous task and it is assumed that repair men would not be permitted to take such risks for the sake of holding pressure on the line when there are other and safer ways to do this job.

It is possible to figure out ways to reduce the pressure below the valve and use some sort of packer in the riser, but any such procedure would be costly and complicated and would not be justified simply to maintain 75 pounds pressure in the main line system.

Rejuvenation of Stripper Wells by Use of Calcium Carbide

I read in a local newspaper a reference to the possibility of rejuvenating stripper wells in Middle District fields by the use of calcium carbide. Can you give me some information on this subject? How does this substance act? Is it a substitute for water flooding? What results may be expected if it is used in a well now producing say a half barrel a day? I would be grateful for any information you can give me.—F. C. E.

While it is not definitely known by this department why calcium carbide was introduced into this well, as it is a well producing from the sand, it is probable that the owner hoped to generate heat at the bottom of the hole through the reaction between water and the carbide. This heat of reaction is sufficient to melt paraffin from the walls of the hole and by doing so the oil will have better opportunity to enter the well.

There are several chemicals that may be used in a well to create heat. In addition to calcium carbide and water, aluminum dust and a caustic iron oxide and aluminum compounds and sodium peroxide and aluminum may be used in wells to create heat by reaction when they combine. Most of these chemicals cost more than calcium carbide.

The reaction between calcium carbide and water will generate approximately 200 British thermal units of heat per pound of carbide, and it is therefore suitable for use in removing paraffin, which has a melting point at about 125° F. Calcium carbide and water may not be as efficient as aluminum dust and a caustic, say lye, or iron oxide and aluminum compounds, but the heat produced by carbide and water is enough to melt the paraffin and as the cost is nominal it can be used economically.

Using chemicals of this kind in a well producing from a sand formation is not for the same purpose, as hydrochloric acid is introduced into wells producing from limestone formations. In the latter case the acid combines with and dissolves the limestone creating additional pore space through which the oil and gas escapes more freely to the bottom of the well.

The heat generated by the reaction between chemicals or created in the bottom of the hole by other methods tends to remove the cake of waxy material deposited on the face of the formation and when this material has been removed oil and gas has a better opportunity to run into the well, but the chemicals do not penetrate back into the formation and create additional pore space.

To use chemicals of any kind in a well it is best to have the advice of a chemist or chemical companies who make it a business to treat wells. Chemicals improperly used can cause more harm than good.

Estimation of Fluid Contents of Core Is an Important Task

Why is it said that examination of the fluid contained in a core obtained in rotary drilling is especially important? I have worked on the drilling floor of wells where they were taking cores and I have noticed that where a core showed very little oil a good well was brought in. You wouldn't have expected a good well from the looks of the core. Evidently almost all the oil had drained out of the core before it got to the surface. So of what use was it in trying to decide what kind of oil sand you had in that particular well?—N. T. D.

Notwithstanding the experience you have had, and it is not an uncommon one, the fact remains that estimation of the fluid contents of cores taken from a drilling well is one of the most important tasks undertaken by the geologist in an oil field. It also is one of the most difficult. Indicative of its importance it may be pointed out that the question of setting a long string of casing for a shutoff may be involved. Then too if the cores begin to look questionable it may be decided best to stop a well in the middle of a sand series. The geologist's advice in such cases may save much money.

There is divergence of opinion as to the value of cores for indicating the potentialities of a sand. A saturated oil sand may—

1. Lose almost all of its oil before it reaches the surface and thus seem to be of little or no value.
2. Show a fair quantity of oil and gas but by no means complete saturation.
3. Seem to be completely saturated and exude much oil.

Some have gone so far as to say that a "bleeding core" never indicates a valuable sand. Most geologists will regard this as a strange assertion, for it seems to imply that the more oil a core shows the less valuable the sand is likely to be. If that were the case, would not a core showing no oil at all indicate an especially promising oil sand, Chares A. Sansom, English geologist, says:

"Much depends on the gravity and type of the oil, the depth of the hole, the bottom hole pressure, the conditions of the coring and the nature of the rock. Cases have been met with where an oil sand showing plenty of oil in a core sample later yielded good production, but on the other hand sands which yielded most promising-looking cores have in some cases failed to give commercial production. This may be due to the sealing off of the sand by the mud fluid used in coring, but such an explanation probably does not always apply. The cases where a good-looking sand has given disappointing results are fairly numerous in Burma, but the writer has found that they are far outnumbered by the cases where good production was obtained from sands which showed plenty of oil in cores.

Why Was It Called That?

PAWHUSKA

Pawhuska, seat of Osage County, Oklahoma, and capital of the Osage Nation, many of whose Indians became immensely wealthy through discovery of oil on the reservation, got its name from an Osage chief, Pawhuska. The word literally means white hair, from "pah-hu," hair, and "ska," white. A legend says that this chief's grandfather, who died in 1808, participated, while a young man, in an engagement with whites. Seizing what he supposed was the scalp of a white officer he found himself holding a white wig. This impressed the Indian so profoundly that he abandoned his name and adopted that of "Pah-hu-ska." The name was passed on to descendents.

PERSONAL PARAGRAPHS

W. M. FARISH, chairman of the board of the Standard Oil Company (New Jersey) is spending a vacation period in Florida.

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LOUIS MEYER, of the Jackson-Meyer Syndicate, returned to Mount Pleasant, Mich., last week after spending two weeks on business in Detroit, Mich.

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I. B. ALLEN, who has been assistant to D. C. HARMON, division engineer in West Texas for the Stanolind Oil & Gas Company, is now stationed in the general headquarters engineering office in Tulsa.

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JOHN P. STEELE, southwestern district sales manager for the South Chester Tube Company, Fort Worth, Tex., has just returned to his headquarters after a 10-day business sojourn in Houston, Tex.

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LAWRENCE W. LEE, of Mount Pleasant, Mich., recently was re-elected president of the G-Lee-P Oil Company, independent operating company in Central Michigan fields. Other officers are: Secretary-treasurer, WALTER BOSWORTH, and directors, EDGAR LEE, ELLSWORTH BROWN, O. DORAN and EARL PELTON.

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A. W. KENNIE has returned to Miles City, Mont., after an extended trip to Los Angeles, Calif.

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ALEXANDER DEUSSEN, geologist of Houston, Tex., has been elected a director of the Schlumberger Well Surveying Corporation.

* * *

BILL RAY, drilling contractor of Fort Worth, Tex., has returned from a business trip to New York and other eastern points.

* * *

O. BRECHTEL, representative for the Parkersburg Rig & Reel Company, Dallas, Tex., has returned from a meeting at Parkersburg, W. Va.

* * *

GALE DEWITT, of the Halliburton Oil Well Cementing Company, is recovering from injuries sustained in the Fitts Pool about a month ago.

* * *

J. H. McLEOD, western production manager of Imperial Oil, Ltd., has returned to Calgary, Alberta, from a business trip to Toronto, Ontario.

* * *

R. G. BECHTEL, production superintendent for Stanolind Oil & Gas Company at Midland, Tex., rejoices over the arrival of a 7-pound son at San Angelo, Tex.

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JOHN A. VIVER, B. R. LUSCHER and H. W. CAVANAUGH, all of Houston, Tex., have formed the Del Mar Oil Company, Inc., and will have offices at Houston.

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ROY MASON, traffic manager of the United Gas system at Houston, Tex., headed a delegation of gas company officials on a tour of the company's properties.

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J. C. JOHNSON, of Borger, Tex., chairman of the Panhandle Chapter of the Production Division of the American Petroleum Institute, and his committee, have started making plans to entertain the April meeting.

F. T. MANLEY, vice president of the Texas Company in charge of manufacturing, is recovering from a recent illness in Arizona.

* * *

NOAH ANDREWS, formerly of Logan, Ohio, has moved his family to Mount Pleasant, Mich., where he has been located since last May.

* * *

ROBERT TOPE, of Mount Pleasant, Mich., an independent operator in Central Michigan fields, has been confined to his home by illness.

* * *

W. T. NIGHTINGALE, of Rock Springs, Wyo., geologist for the Mountain Fuel Supply Company, was in Casper, Wyo., on business connected with the Ohio Oil Company.

* * *

MARVIN LEE, Wichita geologist and technical adviser to the Kansas Corporation Commission, conferred in Oklahoma City, Okla., with W. J. ARMSTRONG, Oklahoma oil umpire.

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F. D. LEONARD, vice president, and D. J. SWAIN, auditor, of the Leonard Drilling Company, of Pittsburgh, Pa., were visitors in Central Michigan fields recently where they conferred with J. W. LEONARD, the former's brother, in charge of operations at Mount Pleasant, Mich.

WALTER O'BANNON, head of the Walter O'Bannon Company, of Tulsa, was a business visitor in Fort Worth, Tex., during the week.

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JOHN WESTON, district representative for the Worthington Pump & Manufacturing Company, Oklahoma City, Okla., was a visitor in Tulsa last week.

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RICHARD KESTER, superintendent, formerly with Standard Oil Company (New Jersey) interests in Mexico, has arrived in eastern Venezuela, where he will be located in the future.

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RAY PARKER, JR., vice president in charge of sales of the Hartol Products Corporation, New York, left last week on a six weeks' business trip to Europe. His itinerary includes Paris, Berlin, London and Bucharest.

* * *

W. L. FAUST, general manager of the aviation department of the Socony-Vacuum Oil Company, Inc., New York, arrived in Dallas, Tex., by plane to attend a meeting of Magnolia Petroleum Company district managers for the five southwestern states. H. W. LAKE, H. F. TARBOX, JULIAN DEXTER, W. HOLBROOK, and L. A. McVEY, all of New York, accompanied Mr. Faust.

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JACK KILGORE, independent operator of Oklahoma City, Okla., was a recent business visitor in Texas.

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R. L. PATTISON, natural gas operator of Chatham, Ontario, visited New York City recently on business.

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PAUL PITZER, of the Chemical Process Company, Breckenridge, Tex., has just returned from a business trip to Tulsa.

* * *

L. M. DEATS, formerly assistant foreman of the Vernon pipe line district for the Lone Star Gas Company, has been promoted to foreman of that district.

* * *

H. W. JACKSON, Kendall Refining Company, Bradford, Pa., has been appointed a member of the American Petroleum Institute's committee on accident prevention for 1935.

* * *

RALPH T. ZOOK, president of Sloan & Zook Oil Company, Bradford, Pa., has returned to his office after a business trip to Tulsa and other Mid-Continent points, and Washington, D. C.

* * *

S. A. HARTWELL, JR., manager of the field service division of the Pennsylvania Grade Crude Oil Association, has returned to his desk after a vacation in Florida in the interests of his health.

* * *

THOMAS E. McAULIFFE, New York City, whose duty it is to "spot" fraudulent uses of the Pennsylvania Grade crude oil emblem, has been re-elected secretary-treasurer of the Oil Marketers Association of New York.

* * *

W. R. KEEVER, vice president and general manager of the Union Sulphur Company, was honored by the employes of the Union Sulphur Company and the Calcasieu Oil Company, Inc., at a celebration on his sixty-ninth birthday and the anniversary of his thirtieth year with the Union Sulphur Company.

DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

January 22, 1910

Frederick G. Clapp, eminent consulting geologist and engineer, while admitting that the Appalachian gas fields are waning, believes that new fields will be found to be productive for another 20 or 30 years.

A half interest in the Parkersburg Tank Co., of Beaumont, Tex., has been purchased by B. E. Byrne, J. J. Miller, John and Jimmy Tucker, William Osborne and Amos Mitchell.

E. L. Doheny, C. A. Canfield, T. A. O'Donnell, J. M. Danziger, L. A. McCray, J. C. Anderson and Dr. Norman Bridges have organized the American Oil Fields, Ltd., a $25,000,000 California company.

20 Years Ago

January 21, 1915

The United States in 1911 (the latest figures available), consumed 7.3 gallons of kerosene per capita, thus leading all consumers. Canada was second with 4 gallons per capita; England third with 3.9 gallons, and Germany fourth with 3.6 gallons per capita.

Baltimore capitalists have reorganized the Indiahoma Refining Co. of Okmulgee, Okla., and will reopen the plant. E. E. Schock is president.

Gustave Jarecki, the last of the five Jarecki brothers, founders of the Jarecki Manufacturing Co., dies at his home in Sandusky, Ohio, aged 80 years.

James C. McDonald, former director of the Standard Oil Co. and manager of the European branch of the company, dies in Washington, D. C.

Over 22,000,000 bbls. of oil is stored in the Cushing Field, Oklahoma, which is producing about 230,000 bbls. per day, with facilities insufficient to move that volume of crude. Pipe lines and railroads combined are able to move only 160,000 bbls. per day.

10 Years Ago

January 22, 1925

The Wortham Field in Texas has passed its peak. It produced 168,462 bbls. from 68 wells on January 14, and six days later dropped to 138,272 bbls. from 86 wells. The field is not two months old. One hundred wells are yet drilling.

The Andian National Corp., Ltd., is reported to be negotiating a bond issue of $15,000,000 for a pipe line in Colombia, South America.

Tonkawa, Okla., crude is selling at a premium of 35 cents per barrel and Garber, Okla., crude at a premium of 60 cents per barrel. The price of oil in other fields in the State is $1.25 for 36 degrees and above.

Dr. Norman Bridges, vice president of the Pan American Petroleum & Transport Co., dies in Los Angeles, Calif., aged 81 years.

Richard Akroyd of Wainwright, Alberta, and Albert McGarvey, of London, Ontario, for many years prominent in Canadian oil circles, died recently.

NELSON Y. RUTH has been made district scout for the Carter Oil Company in the Greater Seminole area, and will make his headquarters in Seminole, Okla.

* * *

E. H. RODGERS, formerly petroleum engineer for the Phillips Petroleum Company at Amarillo, Tex., is now field representative for the Miller Method Company in the Panhandle district.

* * *

BILL BROOKOVER, formerly with Gulf Production Company and for a time head of the co-operative operating concern handling one and two-well properties for individuals in East Texas, has joined Shasta Oil Company's organization in Wichita Falls, Tex.

* * *

C. H. FORSTER, vice president, and D. M. SACHS, president, of the National Transit Pump & Machine Company, Oil City, Pa., are at Monroe, La., where one of the largest gas compressor units ever constructed is to be put in service for the Interstate Gas Company.

* * *

C. B. TAYLOR has resigned as manager of the American Tank & Equipment Company at Oklahoma City, Okla., to become manager of the Progress Brewing Company in the same city and was tendered a farewell party by officials and local employes of Black, Sivalls & Bryson, Inc., holding company.

* * *

STUART COLEMAN, connected with the research department of Standard Oil Company of New Jersey, with headquarters at New York, has returned home after a visit to Houston, Tex., where he formerly was connected with the Humble Oil & Refining Company. He returned by the way of Baton Rouge, La., where he visited the company's refinery.

* * *

CHARLES F. ROESER, of Roeser & Pendleton, Fort Worth, Tex., spent three days in Washington, D. C., on business.

* * *

W. L. FELTON, of the Phillips Petroleum Company, Bartlesville, Okla., was a business visitor in Dallas, Tex., during the week.

* * *

GLEN BYERS, with the Shell Petroleum Corporation, Dallas, Tex., was a business visitor in Houston, Tex., during the week.

* * *

R. D. PARKER, E. V. FORAN, and W. F. KNODE, all well known engineers of Texas, have recently established at Austin, Tex., a general petroleum engineering practice to be known as Parker, Foran & Knode, with headquarters in the Norwood Building.

* * *

HAYES McCOY, of the Empire Companies, Bartlesville, Okla., was re-elected president of the Osage Oil and Gas Lessees Association for a fourth term last week. W. P. Z. GERMAN, Skelly Oil Company, vice president, and CLAREL B. MAPES, secretary-treasurer, both of Tulsa, were also re-elected.

* * *

W. S. SCULLY, who has been representing the petroleum administrator in matters pertaining to operation of the Kettleman North Dome Association, has been appointed temporarily to succeed W. H. EATON as representative of SECRETARY ICKES as a member of the Pacific Coast Petroleum Agency.

* * *

JOHN CUNNINGHAM, Bradford, Pa., who is a leading operator in the Oriskany sand gas belt in New York and Pennsylvania, directed fire fighting efforts successfully at one of his wells in Willing Township, Allegany County, New York. The blaze was costing $1,000 a day and had been going 54 hours.

Pipe Line Leak Got Him an Oil Job

Ben L. Mouser, now general superintendent for Slick, Pryor & Lockhart, Inc., had wanted a job in the oil fields from early boyhood but his folks had an old-fashioned idea he ought to stay in school while he had the chance. His day came when he discovered a leak in a 12-inch line of the Buckeye Pipe Line Company near his home in Spencerville, Ohio. He told Mike McCray, superintendent. Mike promptly handed Ben a $5 bill as a reward.

BEN L. MOUSER

"I'd rather have a job than the money, Mr. McCray," Ben said.

So at 17 Ben went to work on the pipe line with the understanding he should return to school in the fall. The records are a little misty as to how long he stayed in school, but anyway two years later he was off for the oil fields in Oklahoma, where his first job was erection of a booster station for the Gulf Pipe Line Company at Preston. After that he was employed on pipe laying jobs for the Texas Company and the Oklahoma Pipe Line Company.

Late in 1910 Mr. Mouser worked in the production department of the old Producers Oil Company in Oil City, La. The Sinclair Oil & Gas Company was being formed in 1917 and Mr. Mouser joined it at Eldorado, Kans. In less than three years he was promoted to foreman, district foreman, and then district superintendent, where he continued until after the merger of the Sinclair and Prairie companies. In October, 1931, he became general superintendent for Slick, Pryor & Lockhart, Inc., one of the largest independent producers in Kansas, with headquarters in Wichita.

Mr. Mouser married Miss Parillee Francis while he was in Oil City, La. They now have a son attending the University of Wichita. Mr. Mouser is active in the Shrine in Wichita and he likes golf and fishing when time permits.

E. G. SEUBERT, Standard Oil Company (Indiana), was in Washington, D. C., for the meetings of the Planning and Coordination Committee.

* * *

WIRT FRANKLIN, president of the Wirt Franklin Petroleum Corporation, Ardmore, Okla., was in Washington, D. C., for two days attending the meeting of the Planning and Coordination Committee.

* * *

W. J. REID, president of the Hancock Oil Company of California, Los Angeles, Calif., is spending several days in Washington, D. C., on business with the Planning and Coordination Committee, of which he is a member.

* * *

DAVID DEAN THOMPSON, JR., was born to MR. and MRS. D. D. THOMPSON, at West Branch, Mich., the first 1935 baby in Ogemaw County where Mr. Thompson is associated with his brother, E. G. THOMPSON, in the contracting firm of Thompson Brothers, also operators in the Mount Pleasant area of Central Michigan.

* * *

PAUL BLAZER, SIDNEY SWENSRUD, and R. E. ALLEN, members of the Petroleum Code Survey Committee appointed by ADMINISTRATOR ICKES to investigate the operation of the petroleum code administration on the industry, traveled to St. Louis, Mo., from Washington, D. C., where they met H. B. FELL, another member of the committee, for a meeting.

* * *

DR. SAMUEL T. YUSTER has been appointed research assistant in the petroleum and natural gas division of the School of Mineral Industries, Pennsylvania State College. Doctor Yuster graduated from North Dakota State College and received his Ph.D. from Minnesota University last June. From 1927 to 1929 he was a chemist with the U. S. Bureau of Standards in San Francisco, Calif.

MR. and MRS. C. B. WRIGHTSMAN, JR., of Houston, Tex., are spending several weeks at Delray Beach, Fla. Mr. Wrightsman is president of the Standard Oil Company of Kansas.

* * *

J. L. McMAHON, division manager for the Texas Company in the North Central Texas zone, who has been confined to his home in Wichita Falls by influenza, has recovered and returned to duty.

* * *

ERNEST O. THOMPSON, junior member of the Texas Railroad Commission was elected its chairman by COMMISSIONERS LON. A. SMITH and C. C. TERRELL. He succeeds Mr. Smith as chairman.

* * *

FREEMAN W. BURFORD, president of the East Texas Refining Company and Eastern Texas Petroleum Company, Dallas, Tex., has been appointed an honorary colonel on GOVERNOR JAMES V. ALLRED'S staff.

* * *

M. C. HOFFMAN, production engineer for Stanolind Oil & Gas Company, now stationed at the company's headquarters in Tulsa, but formerly at the Fort Worth, Tex., division office, was in Fort Worth last week.

* * *

VIRGIL HICKS, for the past 25 years with Laurel Oil & Gas Company, Tulsa, has severed his connections with that organization to become assistant to E. H. MOORE, Tulsa oil producer, in the management of his properties. Mr. Hicks will continue to make his home in Tulsa.

* * *

H. O. CASTER, a member of the Henry L. Doherty organization of New York, was elected a director of the Kansas City Gas Company at the annual stockholders meeting. He succeeds W. S. McLUCAS, now president of the National Bank of Detroit.

* * *

A. G. MOORE, who has been district manager for the Pure Oil Company at Columbus, Ohio, has been promoted to special representative for the Columbus zone. He will be succeeded by GEORGE A. WAHOFF, formerly district manager at Akron, Ohio.

* * *

DR. GEORGE GRANGER BROWN, of the department of chemical engineering, University of Michigan, is making an analysis of all Michigan crudes to be available later this year when it will be published by the State Conservation Department.

* * *

D. M. McCARGAR, Allis-Chalmers Manufacturing Company, Tulsa, has been advanced to the position of district manager for the newly created Oklahoma-Arkansas district of his company and will continue to make his headquarters in Tulsa. The office was formerly maintained as a branch.

* * *

D. C. HINDS, field clerk for the Stanolind Oil & Gas Company, at Carlisle, East Texas, has been transferred to the Greta Field, in South Texas; C. M. WHITMORE, field clerk at Greta, has been moved to Houston, Tex.; J. E. WOOTEN, petroleum engineer, at Midland, is now production foreman with headquarters at Odessa, and J. R. PRYOR has been transferred from the Willow Springs office in East Texas to Tulsa.

* * *

H. E. RODGERS, formerly technical assistant to the Texas Panhandle division production superintendent of the Phillips Petroleum Company, Whittenburg, Tex., recently resigned, and has opened an office at Amarillo, Tex., as consulting petroleum engineer. He has recently also become associated with the Miller Method Company, as field manager. C. E. STURDEVANT was transferred from the Oklahoma City district to succeed Mr. Rodgers as technical assistant to the Panhandle division superintendent for the Phillips Petroleum Company.

MARKET RECORD OF OIL SECURITIES

Active Oil Stocks Listed on New York Stock Exchange

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended January 19 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1934	1934 High	1934 Low	1933 High	1933 Low
53½	48½	4,200	53½	49¾	53½	Amerada Corp.	774,875	N.P.	50cQ	1-31-35	$2.00	55⅝	39	47⅝	18½
25⅝	23¾	6,200	25	23¾	24½	Atlantic Refining	2,673,834	$25	25cQ	12-15-34	1.00	35¼	21½	32½	12⅝
7	6¼	8,200	6⅝	6¼	6⅝	Barnsdall Corp. A	2,248,795	$5	....	5-11-31	....	10	5⅞	11	3
7¾	6⅝	14,800	7	6⅝	6⅞	Columbia Gas & Elec.	11,610,036	N.P.	....	5-15-34	‡ .25	19¼	6⅝	28½	9
8¾	7½	14,400	7⅞	7½	7¾	Consolidated Oil Corp.	14,218,835	N.P.	14c	10-31-34	.42	14¼	7¼	15¾	5
19⅛	16¾	12,200	18	16¾	17⅞	Continental Oil of Delaware	4,738,593	$5	25c	10-31-34	.50	22¾	15¾	19⅝	4⅞
18⅞	16⅛	4,600	17⅞	16⅛	17⅛	General Asphalt	387,149	$10	....	6-15-32	....	23½	12	27	4⅝
3⅞	2¾	900	2⅞	2¾	2¾	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	5⅝	2½	7⅜	1⅜
1⅞	1	700	1½	1	1½	Louisiana Oil Refining	1,302,158	N.P.	....	.....	....	3⅜	¾	4	⅝
12⅞	11	1,600	11⅝	11	11⅝	Mid-Continent Petroleum	1,857,912	$10	25c	11-15-34	.50	14⅜	9⅛	16	3⅜
14⅝	12	500	12¾	12	12¾	National Supply of Delaware	382,591	$25	....	5-15-31	....	21⅛	10	28⅝	4
10⅞	9¾	7,000	10⅛	9¾	10⅛	Ohio Oil Co.	6,563,107	N.P.	15c	12-15-34	.45	15⅞	8½	17⅝	4⅜
8½	7⅛	500	7½	7⅛	7½	Pacific Western Oil	1,000,000	N.P.	40c	11-30-34	.40	9⅜	5½	9½	3
1⅜	¾	500	1⅛	⅞	1⅛	Panhandle P. & R.	198,770	N.P.	....	.....	....	2½	⅝	4¼	⅜
16	14⅛	7,600	14⅞	14⅛	14⅞	Phillips Petroleum	4,154,687	N.P.	25c	12-1-34	1.00	20¾	13⅜	18¾	4⅜
8¾	7⅝	1,200	7⅞	7⅝	7¾	Plymouth Oil Co.	990,261	$5	4% Stk.	12-22-34	75c & 4% Stk.	16¾	7¼	17⅝	6¾
7¾	6⅝	6,600	7⅛	6⅝	6⅞	Pure Oil	3,038,370	N.P.	....	9-1-30	....	14⅞	6⅛	15⅜	2½
31½	29¾	1,100	31½	30¼	31½	Royal Dutch N. Y. shares	432,224	$14	$1.35	7-31-34	1.35	39⅛	28⅝	39¾	17⅝
26⅞	21	4,100	23¾	21	23	Seaboard Oil of Delaware	1,204,460	N.P.	15cQ§	12-15-34	1.00	38⅜	20¾	43⅜	15
7⅞	6⅝	4,300	7¼	6⅝	7⅛	Shell Union Oil	13,070,625	N.P.	....	6-30-30	....	11½	6	11⅝	4
71¼	68¾	800	71	70	70	Shell Union Oil pfd.	400,000	$100	....	7-1-31	....	89	57	61	28½
18⅝	15¾	11,100	17⅞	16½	17	Simms Petroleum	461,000	$10	50c	2- 1-35	.55	17⅛	7¼	12⅜	4⅞
7⅛	6½	800	7⅛	6½	7⅛	Skelly Oil	1,008,514	$25	....	12-15-30	....	11½	6	9⅞	3
14⅞	13⅝	27,100	14⅛	13⅝	13¾	Socony-Vacuum	31,019,694	$25	15cQ	12-15-34	.60	19⅞	12½	17	6
32⅜	30⅛	10,900	31	30⅛	31	Standard Oil of California	13,102,900	N.P.	25c	12-15-34	1.00	42⅞	26½	45	19½
25½	24½	10,000	24⅞	24½	24⅝	Standard Oil (Indiana)	15,941,894	$25	25cQ	12-15-34	1.00	32¾	23¼	34	17
30⅛	30	500	30⅛	30	30	Standard Oil of Kansas	200,000	$10	50cQ	10-31-34	2.00	41	26	39⅞	12¾
43½	41	14,200	42⅛	41	41⅞	Standard Oil of New Jersey	25,740,065	$25	50cSA§	12-15-34	1.25	50⅛	39¼	47½	22⅜
67½	65	400	65⅝	65	65	Sun Oil	1,733,013	N.P.	25cQ	3-15-35	$1 & 9% Stk.	74¼	51½	59	35
21⅝	19⅝	10,900	20	19⅝	19⅞	Texas Corp.	9,486,417	$25	25cQ	1-1-35	1.00	29⅜	19⅝	30⅛	10⅜
4¼	3¼	4,900	4¼	3¼	4	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	....	6½	2½	6½	1⅜
10	8¾	14,500	9¼	8¾	9	Tide Water Associated	5,618,672	N.P.	....	2-16-31	....	14⅜	8	11¾	3⅛
87½	84	300	85¾	84	85¾	Tide Water Associated pfd.	666,524	$100	$2.	12-22-34	‖8.50	87	64½	65¼	23½
16⅜	15	1,600	15½	15	15¼	Union Oil of California	4,386,070	$25	25cQ	11-10-34	1.00	20½	11½	23⅜	8½
26¼	24⅝	1,500	25⅜	24⅝	25⅝	Union Tank Car	1,200,000	N.P.	30cQ	12-1-34	1.20	25¾	15⅝	22¾	10½
2⅝	2¼	300	2⅝	2¼	2¼	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	5¾	2	5½	2

*Ex-dividend. †Plus extras in common stock. §Plus extras. ‡Payable in 5 per cent convertible preference stock. ‖On account of accumulated dividends.

Active Oil Stocks Listed on New York Curb

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended January 19 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1934	1934 High	1934 Low	1933 High	1933 Low
33	32	50	32¼	32¼	32¼	Buckeye Pipe Line Co.	200,000	$50	75cQ	12-15-34	$3.00	38	26	39¾	25
2⅜	1⅞	2,400	2¼	1⅞	1⅞	Carib Syndicate	799,020	25c	....	.....	....	5½	1½	7¾	⅛
147½	140	150	142	140	140	Chesebrough Mfg. Co.	120,000	$25	$1Q†	12-28-34	11.50	150	116	129	71
1½	1¼	22,700	1½	1¼	1⅜	Cities Service	37,804,394	N.P.	....	6-1-32	....	4¼	1¼	6¼	1½
¾	⅝	400	⅞	⅝	¾	Colon Oil	2,200,000	N.P.	....	.....	....	3¼	½	4	¼
¾	⅝	200	¾	¾	¾	Cosden Oil	399,687	$1	....	.....	....	3⅞	½	3⅞	1⅜
13⅜	12	5,600	12⅝	12	12⅝	Creole Petroleum	6,974,356	$5	....	.....	....	14⅜	9⅝	12	4⅝
4⅞	4⅞	No sales ..	..	..	..	Darby Petroleum	509,696	$5	25c	1-25-35	.50	7½	4⅛	8	2⅛
1⅛	1⅛	No sales ..	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	....	2¼	1	2¾	⅞
34	34	No sales ..	..	..	..	Eureka Pipe Line	50,000	$100	$1Q	2-1-35	4.00	37	30	41¾	20
60⅞	55⅝	4,500	58	55⅝	57¾	Gulf Oil Corp.	4,538,101	$25	....	10-1-31	....	76¾	49¾	62	24
48⅛	44	3,900	46¼	44	46¼	Humble Oil & Refining (new)	8,923,935	N.P.	25cQ	1-2-35	‖1.25	49½	33¼	‖105½	40
17¼	16⅜	8,600	17	16⅜	16⅜	Imperial Oil of Canada	26,857,152	N.P.	25cSA†‡	12-1-34	.92½	17⅞	12⅝	15⅞	6½
4⅛	3¾	No sales ..	..	..	..	Indiana Pipe Line	300,000	$10	15cSA†	11-15-34	.35	6⅞	3⅝	8	3⅛
31⅜	28⅞	10,900	30¼	28⅞	30	International Petroleum	14,247,088	N.P.	56cSA†‡	12-1-34	2.28	33⅜	19⅜	23½	8⅞
5	4⅜	5,000	4¾	4⅜	4½	Louisiana Land & Exp.	3,000,000	N.P.	....	.....	....	5	2⅛	2¼	⅜
4⅜	4⅜	No sales ..	..	..	..	Lion Oil Refining	270,000	N.P.	....	10-27-30	....	6	3⅜	9½	1¼
6¼	5¼	1,900	6¼	5⅝	6¼	Lone Star Gas	5,382,723	N.P.	15c	2-15-35	¶ .16	8⅜	4¼	11⅞	4⅜
4⅝	4⅛	3,400	4½	4⅛	4⅛	Mountain Producers	1,682,182	$10	15cQ	1-2-35	.60	5½	4	6¼	2½
13½	13	900	13½	13⅜	13½	National Fuel Gas	3,810,183	N.P.	25cQ	10-15-34	1.00	18⅛	13⅛	20	10
7¾	7¼	200	7¾	7½	7½	National Transit	500,000	$12.50	35cSA	12-15-34	.75	9½	7	10	5½
2⅝	2⅜	200	2½	2⅜	2⅜	New Bradford Oil	1,445,202	$5	10c	9-15-34	.20	2½	1¾	2⅛	½
2⅛	8⅜	1,500	2	1⅝	1⅝	New Mexico and Arizona	1,000,000	$1	....	.....	....	2¾	1	1⅞	⅛
3½	3¼	100	3⅜	3⅜	3⅜	New York Transit	100,000	$5	15cSA	10-15-34	.30	4¾	3	4⅞	..
5¼	5¼	No sales ..	..	..	..	Northern Pipe Line	120,000	$10	25cSA	1-2-35	.50	7	4⅝	6⅛	4⅛
2½	1⅝	1,400	1⅞	1⅝	1⅞	Pantepec Oil	1,608,700	N.P.	....	.....	....	2⅝	⅞	3¾	⅛
1¼	1⅛	200	1¼	1¼	1¼	Ryan Consolidated	296,931	N.P.	....	.....	....	3⅜	⅞	4¼	⅝
6¼	5¾	1,900	6⅛	5¾	6	Salt Creek Producers	1,496,859	$10	20cQ	2- 1-35	.80	7⅞	5½	9¼	3½
23¾	22⅝	500	23	22⅝	23	South Penn Oil	1,200,000	$25	30cQ	12-31-34	1.20	26½	17½	22⅛	11
3⅞	3⅞	No sales ..	..	..	..	Southern Pipe Line	100,000	$10	15cSA	9-1-34	.25	5½	3½	6	2⅛
50	50	No sales ..	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$1Q	12-31-34	5.00	47	41	43	24½
19¼	18	8,300	19¼	18⅝	19⅛	Standard Oil of Kentucky	2,606,983	$10	25cQ†	12-15-34	1.50	18⅜	14⅝	19¼	8⅜
9	8½	100	8¼	8½	8½	Standard Oil of Nebraska	190,822	$25	....	6-20-34	.50	16⅞	8¼	20½	11
15	13½	950	14	13½	13¾	Standard Oil of Ohio	753,740	$25	....	1-3-33	....	28½	12¼	41	15½
1¼	1	2,500	1⅛	1	1⅛	Sunray Oil	1,610,810	$1	....	4-15-31	....	2	⅛	1½	⅛
6⅞	5¾	800	6½	5¾	6½	Texon Oil & Land	936,028	N.P.	15cQ†	12-29-34	.90	11	4⅜	13¾	6¼

*Ex-dividend. †Plus extras. ‡Payable in Canadian funds. §Payable in preferred stock. ‖Includes 50 cents on old $25 par value stock. ¶Payable in preferred stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

Slow Purchases by Jobbers in Chicago Area but Prices Are Holding Well

By SPECIAL CORRESPONDENT

CHICAGO, Jan. 21.—Extremely slow purchase of gasoline by the jobbing trade in the spot market, along with delayed orders on contracts as long as possible is causing some little concern over the tank car price situation. The offerings of gasoline made on the open market in these circumstances are creating more easiness in the ruling price situation than normally would be the case, considering the not over-large volume of this material. While there is no widespread amount of distress gasoline, there is sufficient to keep jobbers on edge and to keep the trade generally a little nervous.

In the face of this condition, tank wagon and service station prices are holding much better than was expected. A survey of many large and small points, particularly the latter, reveals that conditions are much better than two months ago and that jobbers have been relieved to a considerable extent from the unfavorable conditions at that time. Moreover the trade as a whole, both jobbers, majors and others, is doing a total volume of business quite good for winter season. Consensus here is that a good gallonage may be expected for the rest of the winter, comparatively speaking; and of course spring business is expected to be much enlarged. Preliminary sales plans are being made up by most sellers for the spring and summer season. Large companies active in this market are as a whole taking a firm attitude toward general market conditions and are refusing to be stampeded.

Plans of the stabilization groups for improved conditions in tank wagon and service station markets in the Middle West continue to bear fruit. All factors in these divisions are now co-operating to maintain prices much more readily than in a long time and the whole central states area is now more nearly on a normal basis than in months. With refiner-buying support in the tank car market it should be possible to maintain a fairly stable market in gasoline. However, there still is an undertone of uncertainty and unsettlement.

Kerosene

Kerosene, subject to a fair domestic demand and a reported export and coastwise call in addition as it is reported to be, is maintaining its price position in good shape. There has been good buying and available supplies are not large. In this territory at least it is firmer than gasoline.

Heating Oils

In the good grades of heating oils there is some little price irregularity but through it all demand has been fairly good. Prices show no inclination to move strongly upward at this time. Distributors are reported holding fairly good sized stocks in anticipation of a prolonged cold spell.

Quality Gasoline

Despite the demand for good gasoline in the North on account of weather conditions, offers of some winter material have been made recently without active takings. Recent slight easiness in natural grades is considered to be related to this and is largely regarded as a seasonal development. Much interest is being shown in new models of motor cars and in the trend requiring gradually better gasoline to operate the average cars. Majors are concentrating on quality of regular and premium gasolines, and jobbers are showing interest in similar conditions.

Coke

Petroleum coke is coming in for a seasonally good call, prices firm to strong at unchanged levels. Movement is good although certain grades are not moving as well as some anticipated earlier.

Heavy Oils

Outlook for heavy industrial fuel and

(Continued on Page 86)

Crude Oil Prices

(Continued from Page 27)

Humble Oil & Refining Co. and Texas Co. Effective September 20 in Salt Flat by Shell Petroleum Corp.

Rocky Mountain States

Iles, light (Sept. 29, 1933)	$.96
Iles, heavy (Sept. 29, 1933)	.90
Florence, Colo. (June 17, 1933)	.80
Fort Collins and Wellington, Colo. (June 17)	(See Salt Creek prices)
Big Muddy (Sept. 29, 1933)	1.01
Frannie, light (May 1, 1934)	.70
Frannie, heavy (Sept. 29, 1933)	.62
Salt Creek and LaBarge (Sept. 29, 1933)	See Stanolind Mid-Continent price schedule
Grass Creek, light (Sept. 29, 1933)	1.18
Grass Creek, heavy (Sept. 29, 1933)	.62
Elk Basin (Sept. 29, 1933)	1.18
Rock Creek (Sept. 29, 1933)	1.02
Lance Creek (Dec. 16, 1932)	.92
Hudson (June 2, 1931)	.65
Lost Soldier (Sept. 30, 1933)	.88
Hamilton Dome:	
Below 18° (July 1, 1934)	.52
18° and above (July 1, 1934)	.62
Torchlight (Sept. 29, 1933)	1.15
Greybull (Sept. 29, 1933)	1.18
Pondera (Sept. 29, 1933)	1.25
Sunburst (Sept. 29, 1933)	1.35
Cat Creek, Montana	1.07
Hogback (Sept. 29, 1933)	1.11
Lea County, N. Mex. (Sept. 29, 1933)	.75
Maljamar (Sept. 29, 1933)	.70
Artesia-Jackson (Dec. 1, 1933)*	.75

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, 1933, by Humble Oil & Refining Co. and other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro. Hamilton Dome, Wyo., by Stanolind Oil & Gas Co.

*Continental Oil Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	$.70
Tullos, Urania, La. (Jan. 13, 1934)	.87
Nevada, Ark. (Sept. 29, 1933)	.60
East El Dorado (Sept. 29, 1933)	.70
Converse, La. (Mar. 17, 1934)	1.03
Elm Grove, La. (Sept. 29, 1933)	.75
Holly, La. (Nov. 17, 1934)	1.03
Pleasant Hill, La. (Mar. 17, 1934)	1.03
Zwolle, La. (Mar. 17, 1934)	1.03
Champagnolle, Ark. (Mar. 17, 1934)	.81
Lisbon, Ark. (Mar. 17, 1934)	1.03
Stephens, Ark. (Sept. 29, 1933)	.70
Urban, Ark. (Mar. 17, 1934)	.60
Other fields	(See gravity table)

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Nevada by Standard Oil Co. of Louisiana. Urbana posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co. Converse, Holly, Zwolle and Urbana by Standard Oil Co. of Louisiana; Elm Grove by Simmons Oil & Refining Co.; Pleasant Hill by Standard Oil Co. and Magnolia Petroleum Co. Champagnolle by Standard Oil Co. and Lion Oil & Refining Co.

Eastern States

TIDE WATER PIPE CO.
(Effective Jan. 4, 1935)

Bradford, Pa.	$2.20
Allegany, N. Y.	2.20

SOUTH PENN OIL CO.
(Effective Jan. 4, 1935)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$2.20
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.87
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.82
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.72
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933)	1.37

PENNZOIL CO.
(Effective Jan. 4, 1935)

Pennsylvania Grade Oil in National Transit Lines:	
Group A (Includes Cochran, Franklin, Hamilton and Doolittle districts.	$2.12
Group B (Includes Titusville district.	2.11
Group C (Includes Turkey and Tidioute districts.	2.10
Group D (Includes Bear Creek and Porkey districts.	2.09
Group E (Includes Eldenau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacey and Kinsua districts. Price depends on length of pipe line haul to plant at Oil City.	2.06

PURE OIL CO.
(Effective Jan. 4, 1935)

Cabin Creek, W. Va.	$1.82
Bradford Hollow, W. Va.	1.82
Kelly Creek, W. Va.	1.77

CREW-LEVICK CO.
(Effective Jan. 4, 1935)

Oil City-Titusville	2.12

Middle Western States

OHIO OIL CO.
(Effective September 29, 1933)

Lima	$1.30
Illinois (Jan. 5, 1934)	1.13
Princeton, Ind. (Jan. 5, 1934)	1.13
Plymouth	Shut in
Western Kentucky (May 26, 1934)	1.08
Midland, Mich. (Sept. 30, 1933)*	1.02
West Branch, Mich.	.86
Oceana, Mich. (Oct. 5, 1933)	.90
Somerset, Ky. (Sept. 30, 1933)	1.23

*Posted by Pure Oil Co. and Simrall Pipe Line Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted prices. West Branch, Mich., posted by Simrall Pipe Line Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Canada

Ontario (September 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (May 21, 1934):†	
Clear naphtha	$2.55
Discolored naphtha	2.37
Crude oil, 50 gravity	2.19
Crude oil, 45 to 49.9	2.07
Crude oil, 40 to 44.9	1.50

*Imperial Oil, Ltd. †Imperial Oil, Ltd. and Regal Oil & Refining Co.

Mexico

Panuco*	$1.00

*F.o.b. ship, based on November transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective September 6, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier, La Habra	Montebello	Santa Fe Springs	La Habra-Coyote	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Coyote
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	....	$.65	$.65	$.65	$.65	....	$.65	$.57	$.57	$.57	$.65
15-15.9	.65	.65	.69	.69	.66	.69	....	.66	.65	.65	.65	....	.65	....	....	....	.65
16-16.9	.66	.65	.72	.73	.69	.73	....	.69	.67	.68	.65	....	.65	....	....	....	.65
17-17.9	.69	.65	.75	.76	.73	.76	....	.72	.70	.71	.65	....	.68	....	....	....	.68
18-18.9	.72	.65	.78	.80	.76	.79	....	.75	.74	.74	.65	....	.71	.61	.61	.59	.71
19-19.9	.75	.65	.81	.83	.80	.82	....	.78	.75	.78	.65	....	.74	.64	.65	.62	.74
20-20.9	.78	.68	.83	.87	.83	.85	....	.81	.82	.81	.66	....	.78	.67	.69	.65	.78
21-21.9	.81	.72	.86	.90	.87	.88	....	.82	.85	.84	.69	$.72	.81	.70	.73	.68	.81
22-22.9	.84	.76	.89	.94	.90	.92	....	.85	.89	.87	.72	.76	.84	.73	.76	.72	.84
23-23.9	.88	.81	.92	.97	.94	.95	$.83	.89	.92	.90	.76	.79	.87	.77	.79	.75	.87
24-24.9	.91	.85	.95	1.01	.97	.98	.86	.92	.97	.93	.80	.82	.90	.81	.82	.78	.90
25-25.9	.94	.89	.98	....	1.00	1.01	.90	.95	1.00	....	.85	.87	.93	.85	.85	.81	.93
26-26.9	.97	.93	1.01	....	1.04	1.04	.94	.98	1.04	....	.89	.90	.96	.89	.88	....	.96
27-27.9	1.00	.98	1.04	....	....	1.07	.97	....	1.08	....	....	.94	.99	.93	.91	....	.99
28-28.9	1.03	1.02	1.07	....	....	1.10	1.01	....	1.11	....	....	.98	1.02	.97	.94	....	1.02
29-29.9	1.06	1.05	1.09	....	....	....	1.04	....	1.15	....	....	1.01	1.05	1.01	.97	....	1.05
30-30.9	1.09	1.10	1.12	....	....	....	1.08	....	....	....	....	1.05	1.09	1.05	1.00	....	1.09
31-31.9	....	....	....	....	....	....	1.12	....	....	....	....	1.08	1.12	1.09	....	....	1.12
32-32.9	....	....	....	....	....	....	1.15	....	....	....	....	1.12	1.15	1.13	....	....	1.15
33-33.9	....	....	....	....	....	....	....	....	....	....	....	1.16	1.18	1.17	....	....	1.18
34-34.9	....	....	....	....	....	....	....	....	....	....	....	1.19	1.21	....	....	....	1.21
35-35.9	....	....	....	....	....	....	....	....	....	....	....	1.23	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	1.26	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	1.30	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.34	....	....	....	....	....

Additional Standard Oil Quotations

Mountain View—Effective July 3, 1934, the following are the pri of the Standard Oil Co. of California for its current purchases of crude oil at the well in the Mountain View Field: 14 to 19.9 degrees, 57 cents; 20-20.9, 58 cents; 21-21.9, 59 cents; 22-22.9, 61 cents; 23-23.9, 63 cents; 24-24.9, 66 cents; 25-25.9, 69 cents; 26-26.9, 72 cents; 27-27.9, 75 cents; 28-28.9, 78 cents; 29-29.9, 81 cents; 30-30.9, 84 cents; 31-31.9, 87 cents; 32-32.9, 90 cents; 33 degrees and above, 93 cents.

Elwood Terrace—F.o.b. ship, 35 degrees, $1.03; 34 degrees, $1.06; 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over, $1.15.

Newhall—14 degrees and over, 57 cents.

McKittrick and Kern River—14 degrees and over, 57 cents.

Wheeler Ridge—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents; 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.

Kettleman Hills—33-33.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.02; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over, $1.11.

The Texas Co. posted in Shiells Canyon, South Mountain and Santa Paula as follows: 14 to 17.9, 57 cents; 3 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cen added for each degree up to and including 50 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 25-25.9; Richfield up to 25-25.9; Brea Canyon an Olinda up to 25-25.9, and Torrance up to 25-25.9.

Union Oil Co., effective September 6, posts same price as Standard Oil Co. in all fields in which both purchase, excepting that in Athens-Rosecrans, Union Oil Co. posts 21-21.9, 72 cents, and 33-33.9, $1.13; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 26 degrees and over; Seal Beach and Alamitos Heights, 26 degrees and over; Coyote Hills, 22 degrees and over; Richfield 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 25 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 52 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.

Kansas Wildcats

(Continued from Page 64)

Gypsy Oil Co.'s No. 1 Dotson, SW SW NW Sec. 25-20-10w.
Siliceous lime 3,394-3,421 ft., T.D.; dry and abd.

Johnson & Carey et al's No. 1 Dyck, SE NE SE Sec. 35-22-5w.
Drlg. 3,383 ft.

Lario O. & G. Co. and Reserve Pet. Co.'s No. 1 Shepherd, SW SW NW Sec. 13-22-5w.
Viola 4,050 ft.; Simpson 4,067 ft.; T.D. 4,094 ft.; H.F.W.; running 5-in. csg.

Lario O. & G. Co. et al's No. 1 Schreg, NW SE SW Sec. 22-19-4w.
Drlg. 2,925 ft.

Langston et al's No. 1 Markle, NE SW Sec. 1-20-9w.
Show of oil 2,890-2,906 ft.; S.D.

Vickers Pet. Co. et al's No. 1 Gouldner, SE NE NW Sec. 16-18-9w.
Cellar.

Yingling et al's No. 1 Maupin, NW SW SW Sec. 1-18-8w.
Viola 3,223-39 ft.; pumped 104 bbls. oil, 2 bbls. wtr. in 24 hrs.; acidized and pumped 60 bbls. oil with show wtr.; to deepen.

ROOKS COUNTY

Stearns & Streeter's No. 1 Meyers, NE NW NW Sec. 24-9-16w.
Oswald 3,084 ft.; S.D. 3,083 ft.

RUSH COUNTY

Flynn et al's No. 1 Hartman, SW SE NW Sec. 4-18-16w.
Location.

Lario O. & G. Co. and Phillips Pet. Co.'s No. 1 Benbow, NW NE NE Sec. 12-17-19w.
Drlg. 3,100 ft.

RUSSELL COUNTY

J. Brousk and R. D. Bailey's No. 1 Kluesner, NW SE Sec. 34-15-12w.
Rig.

Blair et al's No. 1 Fink, SW NW SE Sec. 16-14-14w.
Oswald 3,055 ft.; acidized at 3,154 ft. and pumped 320 bbls. oil; 6-in. 3,246 ft.; granite wash 3,318 ft.; T.D. 3,479 ft.; H.F.W.; P.B. to 3,170 ft. and C.O.

Eldorado Ref. Co.'s No. 1 Walz, SE NE NW Sec. 29-13-11w.
Set 10-in. csg. 2,090 ft. and S.D.

Darby Pet. Co.'s No. 1 Jarus, NW SW NE Sec. 16-16-12w.
Siliceous 3,348 ft.; T.D. 3,351 ft.; pumped 596 bbls. oil; comp.

Hartman & Blair's No. 1 Krause, NE NW NW Sec. 5-15-15w.
Rig.

Hartman & Blair's No. 1 Sullivan, NE NE SE Sec. 2-14-15w.
Drlg. 975 ft.

Hartman & Blair's No. 1 Gurney, SE SE NW Sec. 23-14-14w.
Lime 2,363-69 ft.; 1,000,000 ft. of gas.

Lario O. & G. Co. et al's No. 1 Nuss, NW SW SW Sec. 11-16-14w.
Location.

Lario O. & G. Co. et al's No. 1 Moore, 760 ft. S and 660 ft. E, NW cor. Sec. 34-13-12w.
S.D. 530 ft.

Wolf Creek Oil Co.'s No. 1 Donovan, SW SW SE Sec. 10-15-15w.
Drlg. 2,350 ft.

Wolf Creek Oil Co.'s No. 1 Kraft, SW cor. Sec. 36-16-11w.
Rig on ground.

Wolf Creek Oil Co. et al's No. 1 Penn Mutual, SW cor. Sec. 22-15-15w.
Rig.

SALINE COUNTY

Dieter et al's No. 1 Herrington, NE NW SE Sec. 3-13-1w.
5-in. 2,163 ft.; drlg. 2,325 ft.

SCOTT COUNTY

Atlantic Oil Prod. Co.'s No. 1 Vanimen, C SE NE Sec. 15-20-33w.
6-in. liner 4,680 ft.; pay 4,670-86 ft.; acidized and pump 572 bbls. in 24 hrs.; comp.

SEDGWICK COUNTY

Aladdin Pet. Co. et al's No. 1 D. Lauck, SE NE NW Sec. 21-28-2.
Drlg. 720 ft.

Allison & Fitzwilliams et al's No. 1 Struthers, NE SW Sec. 34-28-2w.
H.F.W. 3,176-87 ft.; T.D. 3,295 ft.; fishing.

Cameron, Derby Oil Co. and Trees' No. 1 Brainard, SW SE NW Sec. 19-24-2.
Spudded and S.D.

Magnolia Pet. Co.'s No. 1 Bartholomew, SE SE SW Sec. 30-27-4w.
Drlg. 3,510 ft.

Syndicate O. & G. Co. et al's No. 1 Ratcliff, NE NW NW Sec. 30-26-2.
Siliceous lime 3,504 ft.; T.D. 3,520 ft.; S.D.

STAFFORD COUNTY

Atlantic Oil Prod. Co.'s No. 1 Hohner, NW SE SE NE Sec. 31-23-14w.
Drlg. 2,320 ft.

Atlantic Oil Prod. Co. and Phillips Pet. Co.'s No. 1 Guthrie, C NW NW Sec. 16-25-11w.
U.R. 10-in. csg. to 2,585 ft.

SUMNER COUNTY

T. Palmer's No. 1 Wentworth, NW NW NE Sec. 9-35-2.
Drlg. 2,365 ft.

TREGO COUNTY

Central Commercial's No. 1 Wagg, NW NW SE Sec. 17-13-21w.
Drlg. 875 ft.

A. D. Morton's No. 1 Jones, SE cor. Sec. 20-12-23w.
Cellar.

Gulf Coast Wildcats

(Continued from Page 58)

cor. of lease, Thomas Sproggins Sur., Abst. A-366.
Rig up.

Texas Co.'s No. 17 Houston Oil Fields Assn., 244 ft. S, 244 ft. W, from NE cor. of Lot 1, A.C.H.&B. Sur. No. 91.
Location.

Texas Co.'s No. 16 Houston Oil Fields Assn., 247 ft. S, 440 ft. E from NW cor. of Lot 19, A.C.H.&B. Sur., No. 91.
Location.

Texas Co.'s No. 13 Houston Oil Field Association, 990.5 ft. N, 48 deg. W, 265 ft. N, 42 deg. E of S cor. of Lot No. 11, A.C.H.&B. Sur. No. 91.
Comp. for gas well; tubing pressure 415 lbs.; T.D. 3,990 ft.

Texas Co.'s No. 2 O. L. Rash, 990 ft. S, 48 deg. E, 330 ft. S, 42 deg. W of N cor. of lease, Thomas Sproggins Sur.
Abd. 4,602 ft.

Texas Co.'s No. 1 Dolmolin, 330 ft. N, 48 deg. W, 330 ft. S, 42 deg. W, from E cor. of Charles O'Donnell Sur. No. 74, H.T.& B. Sur.
Abd. 5,279 ft.

Texas Co.'s No. 1 Joe Grace, 200 ft. S, 200 ft. W of NE cor. of lease, Lot 7, Charles O'Donnell Sur. No. 74.
Drlg. shale 4,567 ft.

Texas Co.'s No. 15 Houston Oil Field Association, 441.9 ft. W and 247.5 ft. S of NW cor. of Lot 7, A.C.H.&B. Sur.
7-in. csg. 3,998 ft.; drlg. plug; T.D. 4,050 ft.

Texas Co.'s No. 1 Wray, 330 ft. N, 42 deg. E of W cor. of lease, Thos. Sproggins Sur.
7-in. csg. 5,688 ft.; T.D. 5,704 ft.; I.P. 458 bbls. per day; tubing pressure 540 lbs.; csg. pressure 520 lbs.

Texas Co.'s No. 1 C. P. Dawson, 247 ft. S, 441 ft. W of NE cor. Lot 59, H.T.&B. Sur. No. 23.
Location.

Texas Co.'s No. 2 Dawson, 247 ft. S. 241 ft. W of NE cor. of Lot 58, H.T.&B. Sur. No. 22.
Location.

Texas Co.'s No. 1 L. C. Dawson, 247 ft. S. 441 ft. W of NE cor. of Lot 49, H.T.&B. Sur. No. 23.
Location.

Texas Co.'s No. 2 Dawson, 247 ft. S, 441 ft. W of NE cor. Lot 48, H.T.&B. Sur. No. 23.
Location.

Trumba Oil Co.'s (J. M. Campbell) No. 1 H. McCauley, 150 ft. each way out of NE cor. of W 5 acres of Lot No. 2, A.C. H.&B. Sur. No. 91.
Location.

WEST COLUMBIA—BRAZORIA COUNTY

Sterling O. & R. Co.'s No. 4 Hogg, 200 ft. S of No. 1, 50 ft. from W line of lease, Martin Verner Sur.
Drlg. shale and lime 4,215 ft.; no report.

Texas Co.'s No. 34 Hogg, 2,483 ft. N, 50 ft. W from SE cor. of lease, M. Varner Sur. Temporarily S.D. 5,242 ft.

BARBERS HILL—CHAMBERS COUNTY

Moody Corp.'s No. 1-C E. W. Barber, 302 ft. from N line and 312 ft. from E line of "B" lease, H. Griffith Sur.
Cutting and pulling screen and liner; T. D. 3,575 ft.

Humble O. & R. Co.'s No. 7-B Kirby, 200 ft. W of No. 6 in Henry Griffith League.
T.D. 5,211 ft.; I.P. 30 bbls. per hr.; ¼-in. choke; tubing pressure 750 lbs.; csg. pressure 1,650 lbs.

Humble O. & R. Co.'s No. 8-B Kirby, 200 ft. N of No. 2, 100 ft. W of E line, Henry Griffith League.
Location.

Sun Oil Co.'s No. 15 Wilburn, 405 ft. from E and 50 ft. from W line of lease, Wm. Hodges Sur.
R.U. to W.O.; T.D. 5,090 ft.

Sun Oil Co.'s No. 10 Chambers, 50 ft. from N and W lines of lease.
Drlg. sand and shale 3,896 ft.

Sun Oil Co.'s No. 17 Wilburn fee, 188 ft. E of W line and 40 ft. S of N line and 120 ft. W of No. 16.
Drlg. rock 829 ft.

Texas Gulf Prod. Co.'s No. 3 T. S. Fitzgerald, 340 ft. S of N line and 60 ft. E of W line of lease.
Drlg. salt 2,303 ft.

Texas Gulf Prod. Co.'s No. 2 Morgan Fitzgerald, 400 ft. N of S line, C of Strip No. 3.
Drlg. salt 2,929 ft.

Texas Co.'s No. 10 Wilburn, 475.8 ft. N. 29 deg., 10 ft. W from SW cor. of lease.
Drlg. salt 3,481 ft.

Texas Gulf Prod. Co.'s No. 3 O. W. Winfree, 505 ft. S of N line and 50 ft. W T.D. 5,702 ft.; I.P. 360 bbls., 10 per cent B.s. and w.; csg. pressure 275 lbs.

Yount Lee Oil Co.'s No. 8 Woodward.
Swabbing oil and S.W. 5,374 ft.

Yount Lee Oil Co.'s No. 27 Chambers Co., 400 ft. W of No. 24 and in line with Nos. 24 and 21.
Drlg. salt 3,301 ft.

Yount Lee Oil Co.'s No. 28 Chambers County, 50 ft. N of S line, direct offset to Sun's No. 10 Chambers County, Wm. Bloodgood Sur.
Derrick.

Yount Lee Oil Co.'s No. 18 Chambers, 215 ft. from N line, 1,500 ft. from W line, Wm. Bloodgood Sur.
R.U. to W.O.; T.D. 4,465 ft.

BOLING—FORT BEND COUNTY

Allied Minerals, Inc.'s No. 1 J. H. Blackwell, 1,400 ft. from E line, 100 ft. from S line of 50-ac. of J. H. Blackwell 100 ac., John Huff Sur.
S.D. for rig repairs 4,495 ft.

Midland Oil Co.'s No. 1 P. F. Coulter, 150 ft. from S line, 4,174 ft. from W line of 100-ac. tract, Miller League No. 2.
Set screen; T.D. 4,186 ft.

Allied Minerals, Inc.'s No. 1 E. C. Farmer, James Scott League, 750 ft. SE of NW line and 150 ft. SW of NE line of Gulf Prod. Co.'s E. C. Farmer 50-ac. tract.
Replugging the hole.

Irwin Larsen et al's No. 1 J. R. Farmer, 100 ft. NW and 100 ft. SW from E cor. of 125-ac. lease, James Scott Sur.
Location.

Trans-State Oil Co.'s No. 1 Dipple, E flank of dome.
10-in. csg. at 592 ft.

THOMPSON COUNTY

Gulf Prod. Co.'s No. 10 Gubels.
7-in. csg. 5,245 ft.; T.D. 5,365 ft.

Humble O. & R. Co.'s No. 29-B Lockwood & Sharpe, 2,292 ft. W of E line, 376 ft. S of N line, 590 ft. E of No. 25.
10¾-in. csg. at 921 ft.; T.D. 929 ft.

Humble O. & R. Co.'s No. 22-A Booth.
7-in. csg. 5,190 ft.; T.D. 5,264 ft.; I.P. 52 bbls. per hr.; ⅝-in. choke; tubing pressure 540 lbs.; csg. pressure 575 lbs.

Naylor Oil Co.'s No. 6 Gehr, 340 ft. from S line, 460 ft. from E line of No. 4 Gehr, S. Kennedy Sur.
7-in. csg. 5,297 ft.; T.D. 5,389 ft.

Naylor Oil Co.'s No. 7 Gehr, 2,020 ft. from E line, 340 ft. from S line, S. Kennedy Sur.
T.D. 5,364 ft.; I.P. 60 bbls. per hr.; ⅝-in. choke.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 41 Moore, 3,372 ft. S along W line from NW cor. of James Frazier Sur., and 2,154 ft. at R/A.
T.D. 5,622 ft.; P.B. to 6,520 ft.

SUGARLAND—FORT BEND COUNTY

Humble O. & R. Co.'s No. 12 Nelson.
10¾-in. csg. 1,154 ft.; Drlg. shale 2,146 ft.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 42 Cade, N. Fitzsimmons Sur., half way between Nos. 26 and 28 and 150 ft. E at R/A.
T.D. 6,063 ft.; P.B. to 5,605 ft.

Yount Lee Oil Co.'s No. 44 Cade.
10-in. csg. at 1,273 ft.; T.D. 1,275 ft.

Yount Lee Oil Co.'s No. 23 Smith.
Drlg. shale 3,310 ft.

Yount Lee Oil Co.'s No. 2 Stewart.
Drlg. shale 4,225 ft.

DICKINSON—GALVESTON COUNTY

Humble O. & R. Co.'s No. 1 Schoper, C S½ of Blk. 15, or on line between Lots 3 and 4 and center N and S. W. K. Wilson Sur.
Prepare to spud.

Humble O. & R. Co.'s No. 1 H. O. and W. G. Jones, 750 ft. N of N bank of Bayou and center T and W. J. O. Sherman Sur.
Derrick.

Humble O. & R. Co.'s No. 1 A. F. Danielson, center of 10-ac. tract, being Lots 6 and 7 of Righter Subd., John Sellers Sur.
Drlg. shale 6,855 ft.

ARRIOLA—HARDIN COUNTY

Houston Oil Co.'s No. 3-X fee, 2,150 ft. S of N line of lease and 150 ft. E of W line of Unit X.
Coring 4,400 ft.

BATSON—HARDIN COUNTY

John Deering's No. 1 Cruse.
T.D. 800 ft.; moving in heavier rig.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 9 N. Jordit, 200 ft. due W of No. 9 R. Jordit.
T-D 1,300 ft. I. P. 75 bbls. per day.

Rio Bravo Oil Co.'s No. 11-R Jordit, 200 ft. due S from No. 9-R Jordit.
Drlg. 466 ft. in gumbo.

SOUR LAKE—HARDIN COUNTY

Arlis Pet. Co.'s No. 1 Harkan and Langham.
Dig pits.

Alpha Pet. Co.'s No. 2-A Wm. Weiss, 100 ft. W of No. 2.
Set csg. 6,660 ft.

Sun Oil Co.'s No. 2 Bernard Corp., 150 ft. from N and W lines of Lot 11, H.T.&B. Sur., Sec. 69.
Drlg. in heaving shale 7,665 ft.

GOOSE CREEK—HARRIS COUNTY

Derring's No. 1 Williams, 130 ft. from SE cor. and 55 ft. NE of Hybush's No. 3, in W. Scott upper league.
Cellar.

Humble O. & R. Co.'s No. 80 Simms-Smith, Scott Lower League, 1,000 ft. E of the most westerly W line, and 300 ft. N of the most northerly S line.
Cutting and pulling 6⅝-in. casing and Packer. T. D. 6,855 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 1 Taylor.
Drlg. sandy shale 5,256 ft.

Rio Bravo Oil Co.'s No. 27-A Settegast, 377 ft. S, 553 ft. W of NE cor. of Settegast "A" tract, James Hamilton Sur.
Swabbing 5,526 ft.

Rio Bravo Oil Corp.'s No. 9-A Settegast, 1,575 ft. N line, 350 ft. E line NE cor. "A" lease, J. A. Kopman Sur.
T.D. 5,411 ft.; standing.

West Prod. Co.'s No. 1 Medelsohm & Ryeman, Block 13, F. J. Rathos Survey.
Prepare to spud.

MYKAWA—HARRIS COUNTY

Danciger O. & R. Co.'s No. 1 Williams, SW cor. of 29-ac. lease.
7-in. csg. 4,810 ft. T. D. 4,867 ft.
Waiting on cement.

TOMBALL—HARRIS COUNTY

Amerada-Stanolind's No. 1 Doyle, 210 ft. from most southerly S line to C of W and E line of 34-ac. lease and approx. 4,950 ft. from W line and 575 ft. from S line of Joseph House Sur.
Drlg. sand 46 ft.

Humble Oil & Ref. Co.'s No. 3-A Schultz, 435 ft. E of WL, 700 ft. N of SL, C Goodrich Survey.
10¾-in. csg. 959 ft.

Humble O. & R. Co.'s No. 2 Gebhart, 466 ft. E of W line, 900 ft. S of N line of survey.
Drlg. shale 5,456 ft.

Humble O. & R. Co.'s No. 6-B Quilter, 466 ft. W of E line of "B" tract, 1,090 ft. N of S line, A. Sanchal Sur.
Drlg. shale 3,618 ft.

Humble O. & R. Co.'s No. 1 Mueller.
7-in. csg. 5,550 ft.; T.D. 5,554 ft.
I. P. 62 bbls. per hour through ¼-in. choke, T.P. 850 lbs.

Humble O. & R. Co.'s No. 3-A Martens.
7-in. csg. 5,585. T.D. 5,590 ft.

Humble O. & R. Co.'s No. 1 Melo, 525 ft. S of N line, 584 ft. E of W line of 246 acres, C. N. Pillot Sur.
Drlg. shale 5,500 ft.

KITTRELL—HOUSTON AND WALKER COUNTIES

Humble O. & R. Co.'s No. 5 Shaw, 990 ft. N and 330 ft. E of SW cor. of the Shaw 100-ac. tract in Charles McEllis Sur.
10¾-in. csg. at 305 ft.

Sunoil Co.'s No. 1 Huffman Charles McEllis Survey. Moving in rig.

VANDERBILT—JACKSON COUNTY

Imperator Oil Co.'s No. 1 Dutton, S C of Lot No. 11, Blk. 25, 450 ft. S of R.R. and 1,350 ft. W line of townsite, Ray Musquiz Sur.
Rigged up and S.D.

Kellough & Tucker No. 1 L. W. Huffman, 10 ft. SW, 10 ft. NW of most southerly corner of Humble Oil & Ref. Co.'s lease, Charles McEllis Survey.
Bldg. derrick.

Turman Oil Co.'s No. 1 T. H. Miller, 150 ft. each way out of E 50 ac. of Miller 100-ac. tract in Ray Musquiz Sur.
Rigging up.

BIG HILL—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 1-A Pipkin, 2,640 ft. S and 2,050 ft. W of NE cor. of survey.
Drlg. shale 6,175 ft.

FANNETT—JEFFERSON COUNTY

Gulf Prod. Co.'s No. 4 Junker, 150 ft. S of N line, 150 ft. W of E line, Tug Junker 260-ac. tract, Wm. Smith League.
Drlg. lime rock 3,600 ft.

CLEVELAND—LIBERTY COUNTY

Blackgold Pet. Co.'s No. 1 R. D. McDonald, 30 ft. due W of Gulf Prod. Co.'s 6-C Kirby, T. Devers Sur.
Coring shale 5,710 ft.

William J. Colegrove et al's No. 1 State School Land & Dev. Co., 446 ft. from W line and 170 ft. from S line of survey, Clayton Rooper Sur.
Location.

Gulf Prod. Co.'s No. 8-C Kirby, 933 ft. due E of No. 1 Kirby.
Drlg. sand and bldrs. 338 ft.

ESPERSON—LIBERTY COUNTY

General Crude Oil Co.'s No. 15 Moores Bluff, midway between No. 10 and No. 12 Moores Bluff.
Drlg. hard sand 3,108 ft.

General Crude Oil Co.'s No. 9 Davis, 1,300 ft. each way from S and E lines of lease in Kokernot Sur.
Resetting screen 5,572 ft.

General Crude Oil Co.'s No. 1 W. D. Kay, Malcolm Duncan Sur., 1,537 ft. along N T.D. 5,928 ft., reaming to straighten hole 5,835 ft.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 4 Crow & Jacobs, 150 ft. E, 420 ft. N of SW corner of lease, Section 21, H & T C Survey.
Location.

Gulf Prod. Co.'s No. 1 Hankomer, 250 ft. W, 420 ft. N of SE corner of George Stingler Survey.
Location.

Gulf Prod. Co.'s No. 17 Boyette, offset to No. 1 Exxel.
T. D. 2,597 ft., I.P. 120 bbls. per day.

HULL—LIBERTY COUNTY

Gulf Prod. Co.'s No. 12 W. L. Thomas, 1,650 ft. N and 150 ft. E of SE cor. of 200-ac. tract, Jessie Devore Sur.
Drlg. sticky shale 6,607 ft.

G. E. Brown and S. F. Bashara's No. 1 David Hannah, Jesse Devore league, 300 ft. S line, 150 ft. E line, 42-ac. Gulf tract.
Derrick.

Sterling O. & R. Co.'s No. 1 Taylor, 180 ft. S of S line of tract, and 5,500 ft. E of E line of 5-ac. tract, J. Devore Sur.
Drill stem stuck. T.D. 4,809 ft.

Texas Co.'s No. 3 Barrow.
Prepare to set screen. T. D. 4,255.

BUCKEYE—MATAGORDA COUNTY

United North & South Dev. Co.'s No. 1 Unit 4, Buckeye farm, J. C. Keller league, 214 ft. N line and 202 ft. E line of lease.
Shut down.

CONROE—MONTGOMERY COUNTY

Humble O. & R. Co.'s No. 73 South Tex. Dev. Co., 6,000 ft. E of most easterly W line, 466 ft. S of N line of Theo Slade Sur. 10¾-in. cs. 980 ft.; drlg. shale streaks of lime 2,947 ft.

Houston Oil Co.'s No. 11 Cartwright, N offset to No. 10 Cartwright.
Drlg. shale and lime 2,575 ft.

SPLENDORA—MONTGOMERY COUNTY

A. A. Franklin, tr.'s No. 1 Cora Neff, 4,000 ft. W of E line and 466 ft. S of N line of Neff 1,000-ac. tract, Walker County School Land Sur.
Drlg. shale 5,775 ft.

Bryce McCandless et al's No. 1 Texas Long Leaf Lbr. Co., 330 ft. from N and E lines of the W½ of Blk. No. 8, Walker County School Land Sur.
Derrick.

ORANGE—ORANGE COUNTY

Trio Oil Co.'s No. 1 D. S. Comier, 69 ft. W of E line and 39 ft. S of N line of 6.83-ac. tract in W. M. Dyson Sur.
S.D. 1,792 ft.

PORT NECHES—ORANGE COUNTY

Port Neches Pet. Corp. et al's No. 1 W. B. Organ, 450 ft. from NE line and 150 ft. from NW line of A. Schramm Sur., S of Port Neches Field.
Rig up.

Texas Co.'s No. 2-B Polk, 695 ft. W and 150 ft. S of NE corner of Jacog Beaumont Survey.
Rig up to work over.

Texas Co.'s No. 3-B Polk, 200 ft. S, 450 ft. W of SE cor. of Mary E. Hall Sur. No. 2.
Drlg. lime 5,450 ft.

Texas Co.'s No. 10 Kuhn, 200 ft. N, 450 ft. W of SE cor. of Mary E. Hall Sur. No. 2.
T.D. 5,970 ft. P.B. 5,928 ft., prepare to make drill stem test.

Texas Co.'s No. 6 Kuhn, 150 ft. E, 150 ft. N of SE cor. of Mary Hall Sur.
I.P. 28 bbls. per hour through 5-16-in. choke. T.D. 5,939 ft.

LIVINGSTON—POLK COUNTY

Gem Oil Co.'s No. 1 Watt, 330 ft. N of S

line. 330 ft. W of E line of lease. A. Viesca Sur.
Rig up.
Gem Oil Co.'s No. 6 Davis & Holmes, 662 ft. from W and 662 ft. from N line of survey, A. Viesca Sur.
Location.
T. D. Humphries' No. 1 J. C. Whitforth, Derrick.
Ownby Drlg. Co.'s No. 1 H. J. Pratt, 200 ft. N and E of H. J. Pratt's 2,203-ac. tract, A. Viesca Sur.
Rig up.
B. M. York's No. 2 Kingsbury County Holding Corp., Tract 19, A. Viesca Sur., 150 ft. N of No. 1.
T.D. 4,334 ft.; I.P. 148 bbls. making small amount of salt water.

GRETA—REFUGIO COUNTY

Atlantic and Stanolind's No. 7-G O'Brien. Derrick.
Hewitt & Daugherty's No. 12 Lambert.
Rig up.
Humble O. & R. Co.'s No. 17 Heard.
Cleaning three 7-64-inch choke; T.P. 475 lbs.; C. P. 600 lbs.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 18 P. H. Rooke, 484 ft. SW of NE line, and 352 ft. W of E line.
Coring shale 4,490 ft.
Houston Oil Co.'s No. 18 W. J. J. Heard, 8 offset to United Prod. Co.'s well on N side of river.
Coring shale 6,325 feet.
United Gas Co.'s No. 4 Fannie Heard old well.
Rigging up to work over.
United Gas Co.'s No. 3 Tom Heard old well.
Moving in to work over.
United Gas Co.'s No. 4 Wilson Heard
Perforated 3,422-44 ft., 700 l'.s. W. P. ¼ choke; 800 lbs., shut in pressure.
United Gas Co.'s No. 10 Wilson Heard, runs 2,062 ft. along NE line Wilson Heard lease from S cor. of Houston Oil Co.'s F. V. W. Heard lease, 4,579 ft. to a point, thence at R/A to line 330 ft. to point of location.
Derrick.
United Prod. Co.'s No. 2 Powers (old well).
T.D. 5,210 ft., I.P. 20 bbls. per day.

COLETO CREEK—VICTORIA COUNTY

Rupert Cox's No. 1 Antone Trybil, R. Manchola Sur.
Derrick.
Plummer Oil Co.'s No. 3 Terrell, 660 ft. NE of No. 2.
T.D. 2,800 ft., setting csg.
Plummer Oil Co.'s No. 3 Zimmer, 660 ft. NE of No. 2.
Drilling 2,250 ft.

McFADDIN-O'CONNOR DISTRICTS—VICTORIA AND REFUGIO COUNTIES

Texas Co.'s No. 9 McFaddin.
Location.

SAN FELIPE—WALLER COUNTY

Texas Co.'s No. 1 J. H. Jones, 330 ft. each way from N line and NW lines of lease Wm. Cooper Sur.
Abd. 5,017 ft.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 10 H. R. Clay.
Running tubing 1,346 ft.

LOUISE—WHARTON COUNTY

Pure Oil Co.'s No. 3 Charles T. Kountze 1,980 ft. SE and 330 ft. SW of N cor. of Morris & Cumming Sur., Sec. 9.
Coring sandy shale 6,543 ft.
Pure Oil Co.'s No. 1 John Macha, 318 ft from NW line and from SE line of F Walnut Sur., and 467 ft. from NE line of 101.53-ac. lease, M.&C. Sur. No. 35.
Location.
Pure Oil Co.'s No. 1 G. Wharton Est., 1,497 ft. from SW line and 318 ft. from SE line of F. Walnut Sur., Abst. A-35.
Drlg. sand 6,156 ft.
Pure Oil Co.'s No. 2 Stewart, Morris & Cummings Sur., Sec. 25, 990 ft. out of SW cor. of 160 acres.
T.D. 8,271 ft. Sidetracked at 5,933 ft.

BAY ST. ELANE—TERREBONNE PARISH

Texas Co.'s No. 9 Bay St. Elane.
Drlg. sand 5,970 ft.

CALLIOU ISLAND—TERREBONNE PARISH

Texas Co.'s No. 15 Calliou Island, Sec. 20-23-22.
T.D. 3,911 ft.; set whipstock at 1,520 ft.
Texas Co.'s No. 17 Calliou Island, Sec. 20-23-22.
Rig up.
Texas Co.'s No. 18 Calliou Island.
Location.

SOUTH LOUISIANA FIELDS

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 2 State.
Drlg. sandy lime 2,464 ft.
Shell Pet. Corp.'s No. 11-C Watkins, 1,200 ft. S of NW cor., Sec. 17-12s-12w.
Location.
Shell Pet. Corp.'s No. 3 State.
T.D. 6,905 ft.

BOSCO—ACADIA AND ST. LANDRY PARISHES

Superior Oil Prod. Co.'s No. 4 Hermandez, 450 ft. E and 330 ft. S of NW cor. of lease, Sec. 34-8s-3e.
Rig up.
Superior Oil Prod. Co.'s No. 7 Larcade, 2,467 ft. E, 190 ft. N of SW cor. N½ NW Sec. 35-8s-3e.
Derrick.
Superior Oil Prod. Co.'s No. 1 E. Comeaux ("A" lease), 330 ft. S, 89 deg. 3 min. E, and 250 ft. S, 30 deg. 21 min. W, of SW cor. N½ NE Sec. 35-8s-3e.
Drlg. hard sand 8,650 ft.
Superior Oil Prod. Co.'s No. 3 Comeaux, 1,324 ft. E of NW cor. NE Sec. 34.
Drlg. sand and shale 8,056 ft.
Superior Oil Prod. Co.'s No. 5 Larcade, 1,665 ft. S and 483 ft. E of NW cor. Sec. 35-8s-3e.
Drlg. sandy shale 4,787 ft.
Superior Oil Prod. Co.'s No. 1 B. Iseringhauser, 330 ft. S and 2,546 ft. W of SE cor. Sec. 27-8s-3e.
Running tubing 7,843 ft.
Superior Oil Prod. Co.'s No. 1 Prejan, 324 ft. N, 330 ft. E of SW cor. NE Sec. 24
7-in. csg. 8,560 ft.; T.D. 8,585 ft.; I.P. 579 bbls., 17-64 in. choke; T.P. 1,360 lbs., C.P. 1,490 lbs.
Superior Oil Prod. Co.'s No. 1 Moise LaVergne, 269.7 ft. W and 98 ft. N of SE cor. of Sec. 28-8s-3e.
Redrlg. shale 6,465 ft.
Superior Oil Prod. Co.'s No. 1 Trahan, 1,391 ft. N, 543 ft. W of SE cor. Sec. 27.
7-in. liner 7,325 ft.; T.D. 7,332 ft.
I.P. 175 bbls. 21 hrs., 7-64 in. choke, T.P. 1,255 lbs.
Superior Oil Prod. Co.'s No. 1 A. Allemond, 350 ft. S, 20 deg. S, 53 min. W, and 530 ft. N, 88 deg., 58 min. W of NE cor. of 37.13-ac. tract, Sec. 33-8s-3e.
Drlg. shale and sand 5,595 ft.
Superior Oil Prod. Co.'s No. 1 M. Kahn, from SE cor. 2,563 N, 20 deg., 53 min. E. and 1,000 ft. N, 89 deg., 23 min. W of Sec. 33-8s-3e.
Drlg. sand and shale 7,800 ft.

EDGERLY—CALCASIEU PARISH

Emerson Oil Co.'s No. 1 Paraffine Oil Co., 945 ft. N. and 50 ft. E of SW cor. NE NE Sec. 28-9s-11w.
I.P. 50 bbls. per day; T.D. 3,722 ft.
Union Sulphur Oil Co.'s No. 3 Hunter, 1,160 ft. N and 220 ft. E of SW cor. SE Sec. 21-9s-11w.
Washing over stuck drill stem; T.D. 3,453 ft.

CAMERON MEADOWS—CAMERON PAR.

Burton-Sutton's No. 1 School Land.
Drlg. shale 4,435 ft.
Burton-Sutton Oil Co.'s No. 4 School Land, 2,891 ft. W and 150 ft. N of SE cor. of Sec. 16-4s-13w.
Derrick.
Magnolia Pet. Co.'s No. 9 Cameron Meadows, 2,266 ft. N and 526 ft. S of NE cor. Sec. 21-14s-13w.
Drlg. shale 3,608 ft.
Texas Co.'s No. 1 Miami Corp.
Drlg. shale 8,539 ft.

CHOCTAW DOME—IBERVILLE PARISH

Standard Oil Co.'s No. 5 Gay, 2,450 ft. S and 425 ft. E of NW cor. of NE Sec. 32-9s-11e.
S.D. 42 ft.

DOG LAKE—TERREBONNE PARISH

Texas Co.'s No. 11 State, 150 ft. N and 2,474 ft. W, SE cor. Sec. 31-21s-16e.
Derrick.

GARDEN ISLAND BAY—TERREBONNE PARISH

Texas Co.'s No. 13 State, 3,391 ft. S and 1,504 ft. W of NE cor. Sec. 107-23-32.
Rig up.
Texas Co.'s No. 14 State, 667 ft. N and 992 ft. E of SW cor. Sec. 37-23-23.
Drlg. shale 1,629 ft.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 6, Alliance Trust, 667 ft. E, 1,787 ft. S line of lease, Sec. 34-11s-1w.
Sidetracked at 5,268 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 4 Hanzen, 1,680 ft. W and 780 ft. N of SE cor. Sec. 11-12s-10w.
Drlg. 626 ft.
Calcasieu Oil Co.'s No. 3 H. C. Hanzen, 150 ft. S and 150 ft. E of NW cor. of lease. Sec. 13-12s-10w.
Drlg. shale 5,612 ft.
Sutton Oil Co.'s No. 1 Miller, 229 ft. N and 100 ft. E of SW Sec. 23-12s-10w.
S.D. 3,401 ft.
Texas Co.'s No. 14 State, 500 ft. SE of No. 13, Sec. 13-12s-10w.
Location.
Union Sulphur Co.'s No. 3 Hanzen.
Drlg. sticky shale.
Union Sulphur Co.'s No. 4 Hanzen.
Drlg. sand and gravel 1,700 ft.
Yount Lee Oil Co.'s No. 1-A Gulf Land, 2,000 ft. S and 50 ft. E of the NW cor of Sec. 22-12-10.
Rig up.
Yount Lee Oil Co.'s No. 12 Gulf Land, 1,625 ft. S and 350 ft. W of NE cor. of NW of Sec. 14-12s-10w.
Drlg. shale 3,733 ft.

NEW IBERIA—IBERIA PARISH

Harrison & Abercrombie's No. 3 Schwing, 500 ft. N and 50 ft. E of No. 2, Sec. 24-12s-5w.
Rig up.
Texas Co.'s No. 1 Hanzen, NE along NW line of lease 508 ft., thence 150 ft. E at R/A, Sec. 54-12s-7e.
Drlg. shale 4,292 ft.

IOWA—CALCASIEU AND JEFF DAVIS

Magnolia Pet. Co.'s No. 11 Walt, 330 ft. E. 330 ft. N of SW cor. NE SE Sec. 13.
T.D. 6,904 ft.
Shell Pet. Corp.'s No. 13 Hyde, 990 ft. S, 330 ft. E of NW cor. NE Sec. 13-9s-7w.
Drlg. shale 1,560 ft.
Shell Pet. Corp.'s No. 6 Stafford, 1,650 ft. from S line, 330 ft. W of NE cor. of lease, Sec. 18-9s-6w.
Location.

JENNINGS—ACADIA PARISH

Simon-Tolson and Gardner's No. 1, 1,020 ft. due E and 250 ft. due W of SE cor. Sec. 46-9s-2w.
Drlg. gumbo 1,805 f..
Yount Lee Oil Co.'s No. 14 Housierre-Latrielle, 260 ft. N of No. 13, Sec. 47-9s-2w.
7-in. csg. 7,383 ft.; T.D. 7,699 ft.; prepare to drill plug.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 12 L.L.&E.
Drlg. sand and shale 2,641 ft.
Texas Co.'s No. 13 Lake Barre.
Washing to bottom 3,050 ft.
Texas Co.'s No. 29 Lake Barre.
Drlg. oil sand 3,329 ft.
Texas Co.'s No. 30 Lake Barre.
T.D. 4,073 ft.; P.B. to 3,096 ft.; whipstocking at 3,156 ft.
Texas Co.'s No. 31 Lake Barre.
Prepare to spud.

LAKE PELTO—TERREBONNE PARISH

Texas Co.'s No. 12 Lake Pelto.
Drlg. sandy shale 5,069 ft.
Whitstone O. & G. Co.'s No. 1 Buckley, 300 ft. S and E of NW cor. SW SW Sec. 35-19s-16e.
T.D. 3,390 ft.; P.B. to 3,053 ft.

LAKE WASHINGTON—PLAQUEMINES PARISH

Humble O. & R. Co.'s No. 23 Cockrell-Moran, 650 ft. N and 21 deg. 30 min. E of No. 2 in Twp. 20s-26e.
T.D. 4,355 ft.; flowed for a short time, then went dead; pulling screen and liner.

LEESVILLE—LAFOURCHE PARISH

Gulf Prod. Co.'s No. 5 Allen.
Drlg. shale 3,327 ft.
Gulf Prod. Co.'s No. 10 Bernard, 1,833 ft. E, 958 ft. S of NW cor. Sec. 26-21s-22e.
Derrick.
Emerald Pet. Co.'s No. 10 State, west bank, 300 ft. S of well No. 1.
Location.
Emerald Pet. Co.'s No. 11 State, east bank, 227 ft. N of well No. 1.
Location.
Emerald Pet. Co.'s No. 12 State, east bank, 250 ft. S of well No. 1.
Location.
Leesville Oil & Gas Co.'s No. 1 Southern Louisiana Canal Navigation Co., 35 ft. W of Bank of Bayou, 15 ft. N of S bank, Sec. 26-21s-22e.
S.D. 4,021 ft.
Lincoln Oil Co.'s No. 5 State.
Location.
Lincoln Oil Co'.s No. 6 Viser.
Drlg. shale 3,270 ft.
Texas Co.'s No. 31 Leesville.
T.D. 4,160 ft.; drlg. sand 2,087 ft.
Texas Co.'s No. 23 Leesville.
Rig up.
Texas Co.'s No. 27 Leesville.
Canal completed.
Texas Co.'s No. 30 Leesville, 1,075 ft. S, 310 ft. E, NW cor. Lot 6, Sec. 26-21s-22w.
Ready for rig.

LOCKPORT—CALCASIEU PARISH

Magnolia Pet. Co.'s No. 12 Bordages, 966 ft. W and 93 ft. N of SE cor. N½ NE Sec. 8-10s-19w.
Drlg. shale 7,680 ft.
Union Sulphur Co.'s No. 1 Moss (W.O.).
Drlg. sand and shale 6,661 ft.

ROANOKE—JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 2 Kratzer, 440 ft. from W line, 440 ft. from S line of 120-ac. tract, Sec. 11-4w-9s.
10¾-in. csg. 3,038 ft.; drlg. shale 3,478 ft.
Humble O. & R. Co.'s No. 1 Clayton, 3,080 ft. S and 440 ft. W, NE cor. Sec. 10-9s-4w.
Rig up.
Humble O. & R. Co.'s No. 1 R. C. Jarnegan, 440 ft. S, 440 ft. E of the NW cor. SE Sec. 12-9s-4w.
Drlg. sandy shale 9,070 ft.
Humble O. & R. Co.'s No. 3 Devilbiss, 1,399 ft. W. 466 ft. S of NE cor. Sec. 14-9s-4w
T.D. 9,425 ft.; flowed 600 bbls., 5 per cent oil, balance salt water; T.P. 1,400 lbs., C.P. 1,900 lbs.
Shell Pet. Corp.'s No. 1 Jarnigan, 330 ft. E. 660 ft. S. NW cor. Sec. 12-9s-4w.
S.D. 9,764 ft.
Shell Pet. Corp.'s No. 1 Carter, 660 ft. N and 330 ft. W of SE cor. NW Sec. 1-9s-4w.
Coring shale 6,781 ft.
Shell Pet. Corp.'s No. 2 Kratzer, 440 ft. N and 440 ft. E of SW cor. NW Sec. 12-9s-4w.
Drlg. shale and lime 6,620 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 2 Noble, E of No. 1.
Drlg. shale 5,730 ft.
Union Sulphur Co.'s No. 790 fee, 929 ft. S and 802 ft. W of C Sec. 29-9s-10w.
Drlg. shale and lime 5,641 ft.
Union Sulphur Co.'s No. 2 Ulrich, 500 ft. N of No. 1.
Drlg. sand and shale 6,230 ft.

VINTON—CALCASIEU PARISH

Wilson Broach's No. 9 Wilson.
Drlg. sand 3,500 ft.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 1 White Castle Shingle Co., 1,830 ft. W, 100 ft. S from NE cor. of lease.
T.D. 2,017 ft.
Shell Pet. Corp.'s No. 9 Wilburn, 300 ft. E of No. 7.
Drlg. plug 6,559 ft.

MISCELLANEOUS WILDCATS

TEXAS

BRAZORIA COUNTY

Amerada Pet. Corp.'s No. 1 Houston Farm Dev. Co., 1,414 ft. N, 316 ft. W of SE cor. of L. Bachelder Sur.
T.D. 7,667 ft.; P.B. to 6,650 ft.; prepare to sidetrack.
Big Creek Oil Co.'s (C. & R. G. Drlg. Co.) No. 2 Truska, 991 ft. W of No. 1, H.T.&B. Sur., Sec. 7.
S.D. 935 ft.
Holt et al's No. 1 Griffith, J. B. Bailey Sur.
T.D. 4,200 ft.; waiting orders.
Luling O. & G. Co.'s No. 1 Jameson, 600 ft. W of E line, 750 ft. S of N line of N. E. Roberts Sur.
Prepare to spud.
Showers & Moncrief's No. 1 Hughey, 5,500 ft. NW of discovery well, in center of Lot 18, H.T.&B. Sur., Sec. 29, Abst. 292.
Location.

CALHOUN COUNTY

Continental Oil Co.'s No. 1 American Nat. Realty Co., C of NE of Sec. 6, Blk. C.
Preparing to work over.

CHAMBERS COUNTY

Humble O. & R. Co.'s No. 1 Middleton, 466 ft. each way out of the SW cor. of survey 13¾-in. csg. at 2,319 ft.; drlg. shale 4,342 ft.
Sun Oil Co.'s No. 1 Hamilton, 1,400 ft. from N line, 1,400 ft. from W line of survey, T.&N.O. Sur., Sec. 128.
Reaming shale 7,433 ft.

COLORADO COUNTY

Danciger O. & R. Co. and L. E. Hults's No. 1 C. L. Raver, 990 ft. N and E of SW cor. 477 acres, Sec. 1, B.B.B.&C. Sur.
Drlg. shale and lime 5,092 ft.

FORT BEND COUNTY

W. A. Shafer et al's No. 1 V. B. Bortash, 693 ft. SW of NE line and 1,003 ft. NW of SE line of Sec. 52, H.&T.C. Sur.
S.D. 2,900 ft.

GALVESTON COUNTY

Gillock Pet. Co.'s No. 2 Maco Stewart, 900 ft. N and 150 ft. W of No. 1, Alex Farmer Sur.
T.D. 1,500 ft.; waiting on surface pipe; S.D.
Texana Gulf Oil Corp.'s No. 1 Thomas Shaw (200 acres), 150 ft. NW line, 165 ft. NE line, Lot 66, Sec. 7, Hall & Jones, Galveston Island.
Drlg. sand and shells 5,346 ft.

GRIMES COUNTY

Hubert Holt et al's No. 1 Simon Fuqua, 1,200 ft. N of S line and 400 ft. W of E line of 177-ac. lease and survey, Moses Evans Sur.
S.D. 3,080 ft.
Dr. Marshall et al's No. 1-B Todd, 300 ft. from E line and 175 ft. from N line of 150-ac. tract in extreme NW cor. of county (25 ft. N of No. 1).
S.D. 3,005 ft.
Roan et al's No. 1 S. W. Sealy, 2,474 ft. N of S line and 850 ft. E of W line of survey, B. F. Smith Sur., 2 miles SW of Kellum Springs.
S.D. 2,650 ft.

HARRIS COUNTY

American Liberty Oil Co.'s No. 1 M. M. Graves, 1,403 ft. N of S line and 467 ft. E of W line of J. W. Bryan Sur.
Abd. 6,626 ft.
Cockburn Oil Co.'s No. 1 Brooks, 7,400 ft. SW of NE cor. of Robert and Richard Vince Sur.
10¾-in. csg. at 909 ft.; T.D. 950 ft.
Esco Oil Co.'s No. 1 E. P. Seureau, 3,333 ft. from W line and 2,215 ft. from S line of 350-ac. tract, W. P. Harris Sur., Abst. A-30.
Drlg. shale 5,375 ft.
Goldston et al's No. 1 Weingarten, 467 ft. out of NE cor. of H.&T.C. Sur., Sec. 39.
Drlg. shale 4,493 ft.
T. S. F. Oil Co.'s No. 1 J. B. Hine, Arthur McCormick Sur., Abst. 46.
Drlg. shale 3,810 ft.
C. C. Foster et al's No. 1 H. K. Johnson, 2,000 ft. from S line and C of E and W lines of G.C.&S.F. Sur.
Drilled 25 ft. and S.D.
Means and McGehee, Inc.'s No. 1 Laura Lackner, 9,857 ft. W and 2,303 ft. N, of H. Rinerman Sur.
Rigging up.
W. U. Paul's No. 1 E. M. House, 2,200 ft. N and 1,000 ft. E of NE cor. of E. Benson Sur. in M. Magruder Sur.
S.D. 3,750 ft.

JACKSON COUNTY

A. M. Harris' No. 1 Whitley, 800 ft. out of SE cor. of F. G. Keller Sur.
Location.

JEFFERSON COUNTY

Sun Oil Co.'s No. 1 H. Long, 1,500 ft. E line, 990 ft. E line of lease.
T.D. 9,045 ft.; swabbing.
Sun Oil Co.'s No. 1 Ebert & Braussard, 4,890 ft. NW along SW line and 660 ft. NE at right angles to SW line, B. Blackman Sur., Abst. No. 2.
Rig up.

LAVACA COUNTY

Humble O. & R. Co.'s No. 1 C. S. Wilson, 330 ft. out of SW cor. of Crenshaw Sur.
Drlg. shale 7,423 ft.

LIBERTY COUNTY

R. M. Bruner et al's No. 1 N. Bell, 150 ft. from N line and 150 ft. from W line of Bell's 187-ac. tract, H.&T.B. Sur. No. 4.
Rigging up.
Extension Oil Co.'s No. 1 J. A. Lovett, 280 ft. from E and 600 ft. from S line of lease, P. P. Deevers Sur.
Coring sandy shale 4,029 ft.
Liberty-Independent Oil Co.'s No. 1 J. M. Neal, 3,550 varas from E line and 500 varas from N line of Samuel Strong Sur.
S.D. 3,440 ft.
A. L. Maxwell's No. 1 M. P. Hinciiff, 200 ft. from E line and 1,000 ft. from the N line of survey, H.&T.C. Sur., Sec. 10s.
Derrick.
Thomas et al's No. 1-A Eicke, 660 ft. from W line and 2,350 ft. from S line of tract in Green Sur.
T.D. 5,047 ft.; 4½-in. csg. at 5,029 ft.

MADISON COUNTY

Texas-New York et al's No. 1, 3,000 ft. E and 1,750 ft. S of NW cor. of J. H. Pearson Sur.
Abd. 2,505 ft.

MATAGORDA COUNTY

Cockburn Oil Co.'s No. 6 Hawkins, 2,600 ft. from NW line, 1,200 ft. from SW line of McCarthy Sur.
Drlg. broken lime 4,383 ft.
Dr. Griffith's No. 1 fee, 3,000 ft. from E line and 3,000 ft. from W line of Wm. H. Bell Sur.
Rigging up and S.D.
Horace M. Smith, Inc.'s No. 1 Wadsworth ranch, 150 ft. out of S cor. of Lot No. 3, Blk. S, R. Fisher Sur.
Drlg. shale and lime 2,845 ft.

MONTGOMERY COUNTY

Reynolds Drlg. Co. et al's No. 1 Mrs. Clara B. Stewart, 330 ft. S and E of most easterly inner cor. of 595-ac. tract, John Corner Sur.
S.D. 5,500 ft.
Walter Keeble's No. 1 Foster, 700 ft. E of W line, 2,000 ft. N of S line, Lot 27.
S.D. to finish R.U.
Woodard-Smith-Cooper's No. 1 J. V. Scott, F. A. B. Wheeler Sur.
S.D. 2,860 ft.

ORANGE COUNTY

Blue Line Oil Co.'s No. 1 Godwin, Richard Ballew Sur., 300 ft. from E line and 150 ft. from NE line of Godwin 20-ac. tract.
S.D. 2,770 ft.

POLK COUNTY

C. & C. Drlg. Co.'s No. 1 Granbury & Smith, 600 ft. N and 600 ft. W from most west-

ern NW cor. of Gulf Prod. Co.'s Graybury & Smith lease, in the Wm. Shadburn Sur.
Derrick.
Howard Dailey et al's No. 1 Z. B. Knox, 1,450 ft. W and 1,920 ft. S of NE cor. of F. Chairs Sur., 16 miles NE of Corrigan.
S.D. 60 ft.
J. F. Anderson's No. 1 E. L. Duke (O.W.D. D.), 400 ft. from E and 350 ft. from S of SW cor. of P. Michelick 50-ac. lease, Abst. 59, P. J. Mineral Sur.
Waiting on a new mud pump; T.D. 5,304 ft.
Marathon Oil Co.'s No. 1 A. S. Jones, 990 ft. from NW and SW lines of J. D. Thomas Sur.
Drlg. shale 2,720 ft.
Dick Schwab's No. 1 Lynch, 330 ft. out of NW cor. of 200-ac. tract in the George Jameson Sur.
Location.
E. A. Thompson's No. 1 Haynes, 990 ft. out of NW cor. of 320-ac. tract and survey, J. Whitmire Sur., E of Leggett.
Rig up.
West Prod. Co.'s No. 1 W. T. Carter, 330 ft. due E of SE cor. of W. D. Johnson's 53.7-ac. lease, 3½ miles E of Livingston Field, S. C. Hiram Sur., Abst. A-37.
Location.

REFUGIO COUNTY

Atkins & O'Neil's No. 1 M. Woods, 466 ft. from N and E lines of NW Sec. 8.
Drlg. 5,460 ft.
Cecil Hagen et al's No. 1 Edith Clarkson, 1,736 ft. from N line, 3,620 ft. from E line of J. Coughlin Sur.
Location.
Magnolia Pet. Co.'s No. 1 F. B. Roake, 330 ft. from S line, 7,150 ft. from W line of Donna Roogas Sur.
Drlg. shale 4,850 ft.
E. W. Price's No. 1 Juries, NW SE cor. Sec. 87, Bonnie View Subd.
Location.

SAN AUGUSTINE COUNTY

Fidelity Exploration Co.'s No. 2 Bryan & Flournoy, 400 ft. from No. 1.
Drlg. 1,565 ft.

TRINITY COUNTY

Moore and McLaughlin's No. 1 White, 350 varas from N line, 263 varas from E line of 56-ac. tract, Goff Sur.
Spudded.

WALKER COUNTY

Seaport Oil Co.'s No. 1 W. B. Ross, in SE cor. of an 80-ac. tract out of the Wm. Hodge Sur.
S.D. 1,994 ft.

WALLER COUNTY

Stanolind O. & G. Co. et al's No. 1 J. W. Tharp, 466 ft. from S and E lines of J. M. Bennett Sur. No. 100.
7-in. csg. 6,998 ft.; prepare to drill plug; Coring shale 7,276 ft.

WHARTON COUNTY

Whitehead and Rash's No. 1 C. T. and D. Kountze, 1,320 ft. from N line, 330 ft. from E line of S.A.&M.G. Sur., Sec. 1, Abstr. 328.
Moving in rig.

SOUTH LOUISIANA
ACADIA PARISH

Humble O. & R. Co.'s No. 1 American Rice Mills, 660 ft. S and 1,320 ft. W from NE cor. Sec. 27-10s-1e.
Drlg. shale 7,227 ft.
Superior Oil Co. et al's No. 1 A. S. Newman, 2,000 ft. N and 1,120 ft. E of SW cor. Sec. 24-7s-1w.
Drlg. shale 7,254 ft.

ASCENSION PARISH

Humble O. & R. Co.'s No. 2 S. Gumbel & Co., 500 ft. southwesterly from No. 1, 275 ft. easterly from road and approx. 475 ft. N of S line of tract, Sec. 33-10s-2e.
9⅝-in. csg. 5,693 ft.; T.D. 5,716 ft.; flowing by heads, 50 per cent oil; tubing pressure 325 lbs.; csg. pressure 475 lbs.

AVOYELLES PARISH

Southern State Pet. Co.'s No. 1 Boyette, 330 ft. N and 330 ft. E of SW cor. Sec. 28-1n-5e.
Rig up.

BEAUREGARD PARISH

Richardson & Martin's No. 1 Southwest Lbr. Location.

CALCASIEU PARISH

Pohs Oil Co.'s No. 1 McIvor, 330 ft. S and W of NE cor. Sec. 14-9s-8w.
Location.
Pohs' No. 1 O. H. Castle, 330 ft. S and 330 ft. W of C Sec. 18-9s-8w.
7-in. csg. 6,900 ft.; T.D. 6,917 ft.; tested gas, small amount of oil; to pull screen and setting and take another core.
Gulf Prod. Co.'s No. 1 H. Starks et al, 1,650 ft. W and 1,980 ft. S of NE cor. Sec. 26-11s-12w.
10¾-in. csg. 2,118 ft.; T.D. 2,123 ft.
Plummer & McDaniels' No. 1 Cockburn-Hood, 1,072 ft. E and 2,400 ft. N of SW cor. Sec. 13-10s-12w.
Prepare to abd.; T.D. 7,278 ft.
Texas Co.'s No. 1 Nickerson, 3,139 ft. N and 2,238 ft. W of SE cor. Sec. 12-9s-8w.
Rig up.
Union Sulphur Co.'s No. 1 Powell Lbr. Co., 600 ft. N of No. 1 State, Sec. 13-9s-8w.
Drlg. shale 5,611 ft.
Union Sulphur Co.'s No. 2 State, 748 ft. S and 8 ft. E, NW cor. SW Sec. 12-9s-8w.
Drlg. gumbo 3,211 ft.
Union Sulphur Co.'s No. 3 State, 2,135 ft. S, 2,340 ft. E of NW cor. Sec. 12-9s-8w.
Location.
Union Sulphur Co.'s No. 1 Castle, 326 ft. N and E of NW Sec. 13-9s-8w.
Drlg. sand and gravel.
Union Sulphur Co.'s No. 1 Buhler, 1,435 ft. N and 425 ft. W of SE cor. Sec. 11-9s-8w.
Drlg. Buhler 2,665 ft., sand and shale.
Wheeler Oil Co.'s No. 1 Gabbert, 1,323 ft. E and 548 ft. N of SW cor. of Sec. 28-9s-7w.
Drlg. shale 7,175 ft.

EAST FELICIANA PARISH

Thompson Creek Oil Co.'s No. 1 Fannie Noland, 2,640 ft. E and 1,580 ft. N of SW cor. Sec. 70.
S.D. 1,490 ft.

EVANGELINE PARISH

Humble O. & R. Co.'s No. 1 Haas, 1,250 ft. SE of Bayou Nezpique, 466 ft. NE of SW line of Sec. 22-4s-1w.
Prepare to abd.; T.D. 8,014 ft.

CAMERON PARISH

Texas Co.'s No. 1 Jessen, 1,170 ft. E and 550 ft. N of C Sec. 24-14s-10w.
Drlg. lime 4,835 ft.

JEFFERSON DAVIS PARISH

George W. Strake's No. 1 Calcasieu Natl. Bank, 200 ft. S and E of NW cor. SE NE Sec. 12-9s-6w.
T.D. 8,019 ft.; D.S. stuck.

JEFFERSON PARISH

Texas Co.'s No. 1 Bayou St. Dennis, 20,907 ft. S, 4,853 ft. E of NW cor. of Twp., Sec. 19-17s-24e.
Building foundation.

LAFOURCHE PARISH

Barnsdall Oil Co.'s No. 3 Harang Plantation.
Abd. 6,409 ft.
Emerald Pet. Co.'s No. 1 Bowie Lumber Co., 4,431 ft. N and 1,632 ft. E of SW cor. Sec. 52-10s-3e.
Drlg. shale 7,745 ft.
Southern Sulphur Corp.'s No. 1 D. L. Lagraize, 300 ft. E of NW cor. of Lot 7, thence 250 ft. S of Sec. 26-21s-22e.
Spudded and shut down.

PLAQUEMINES PARISH

Venice Corp.'s No. 1 Burras.
Drlg. rock 1,754 ft.

RAPIDES PARISH

J. B. Evers' No. 1 G. Wettermark, 540 ft. S and 520 ft. E, NW cor. NE SW Sec. 35-6n-2e.
Rig up and S.D.
C. D. Lee's No. 1 Barrett, 330 ft. NW of SE line and 330 ft. NE of SW line of Sec. 40-5n-1w.
Rig up and S.D.

ST. BERNARD PARISH

Danciger's No. 1 Battles, 836 ft. N, 2,198 ft. W of SE cor. Sec. 135-14s-14e.
Cmtd. csg.; moved off rig; T.D. 6,001 ft.

ST. LANDRY PARISH

Bailey Gaunce's No. 1 Lewis, 300 ft. N and E of SW cor. of NW of NE of Sec. 29-5s-6e (workover).
Washing to bottom 5,643 ft.
H. J. Weir's No. 1 Declouet, Sec. 105-8s-5e, near Lafayette Parish line and 3 miles N of Anse La Bute Field.
S.D. 2,222 ft.

ST. MARTIN PARISH

Texas Co.'s No. 6 St. Martin Land Co., 660 ft. S and 500 ft. W of NE cor. SE Sec. 17-8s-7.
Abd. 9,767 ft.

TANGIPOHA PARISH

R. A. Compton's No. 1 Lake Superior Piling Co., 200 ft. W and N of SE cor. Sec. 19-5s-9e.
Prepare to spud.

VERMILLION PARISH

Moore Bros.' No. 1 Brussard, 350 ft. S of N line, 250 ft. E of W line, NE cor. Sec. 33-11s-3e.
T.D. 4,056 ft.; fishing.

La.-Ark. Wildcats

(Continued from Page 60)

Helena Oil & Gas Co.'s No. 1-B Graham, 330 ft. S and W NE cor. NE NW Sec. 30-9-13.
S.D. 2,000 ft.
Lawson-Leavell's No. 1 Whitney Corp., 330 ft. N and E, SW cor. NE SW Sec. 5-9-13.
Whipstocking 2,742 ft.
Jack Lent's No. 1 Williams, Sec. 13-7-11.
Set 10-in. 62 ft.; S.D. 440 ft.
Dr. O. B. Hicks' No. 1 Neal, SE SW SE Sec. 18-9-12.
Set 10-in. 40 ft.
Strickland et al's No. 1 Whitney Corp., Sec. 32-10-12.
Set 8-in. 1,445 ft.; T.D. 1,448 ft.

TENSAS PARISH

Schumacher, tr.'s No. 1 Curry, Sec. 39-11-12e.
Arranging to deepen 3,750 ft.

ARKANSAS
ARKANSAS COUNTY

Grand Prairie Realty Co.'s No. 1 Fischer, 200 ft. S and E, NW cor. NE NW Sec. 6-6s-4w.
Cmtd. bottom of hole, 1,724 ft.

ASHLEY COUNTY

J. D. Houseman et al's No. 1 Boreine Farms, 660 ft. S and W, NE cor. Sec. 1-18-8.
Derrick.

CALHOUN COUNTY

R. J. McMurray's No. 2 Calion Lbr. Co., 330 ft. N and W, SE cor. Sec. 33-15-14.
Reaming to bottom 3,196 ft.

HEMPSTEAD COUNTY

E. A. Austin's No. 1 McWilliams, 300 ft. N and W of SE cor. NW SW Sec. 19-13-23.
Rig moved and abd.; 2,212 ft. (corrected).
A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-13-26.
S.D. 1,992 ft.

LAFAYETTE COUNTY

W. H. Harvey's No. 2 Allen, Sec. 18-19-24.
S.D. 850 ft.; (corrected).

LONOKE COUNTY

J. G. Strahan's No. 1 Hardin, Sec. 18-2s-7w.
Drlg. 1,298 ft.

MILLER COUNTY

Duluth-Ark. Oil Co.'s No. 4 Beck, SE cor. SE SW Sec. 34-15-26.
W.O.S.R. 2,941 ft.
Fitzwater et al's No. 1 Norson, SW cor. SE SW Sec. 20-15-27.
S.D. 3,177 ft.
Ark. Oil, Gas & Ref. Co.'s No. 1 Beck, SW cor. NW SW Sec. 34-15-26.
1,200 ft. oil in hole at 2,920 ft.
King Oil Corp.'s No. 1 C. H. Schroder, 200 ft. N, 330 ft. E, SW cor. SW NE Sec. 24-14-28.
S.D. 3,167 ft.
Magnolia Pet. Co.'s No. 6 Olivet, 330 ft. S and E, NW cor. NE NW Sec. 3-16-26.
W.O.S.R. 2,933 ft.
A. C. Roan's No. 1 Frost Est., 150 ft. N and W, SE cor. SE SW Sec. 8-15-26.
Set 10-in. 120 ft.
Thorntree Oil Corp.'s No. 2 E. H. Beck, SE cor. SW SW Sec. 34-15-26.
W.O.S.R. 2,933 ft.
Lee Timberlake's No. 1 Frost Est., 330 ft. N and E, SW cor. SW SE Sec. 27-15-26.
S.D. 1,275 ft.
John Wrather's No. 2 H. E. Beck, 330 ft. N and W, SE cor. SW SE Sec. 34-15-26.
Rigging up.

OUACHITA COUNTY

F. A. Book et al's No. 1 Arnold, Sec. 34-15-16.
S.D. 2,032 ft.
S. J. Carnes' No. 1 L. Caldwell, 330 ft. S and E, NW cor. Sec. 12-14-19.
Rigging up.
T. J. Gaughan's No. 2 M. Bragg, 330 ft. S and E, NW cor. NE SE Sec. 25-13-18.
Derrick.
T. J. Gaughan's No. 1 Cartier, 330 ft. S and E, NW cor. SE SE Sec. 25-13-18.
Dry and abd. 2,500 ft.
Lovett & Darwins' No. 1 James Boyd, Sec. 17-13-17.
Set 10-in. 80 ft.; S.D. 1,270 ft.

UNION COUNTY

Alice-Sidney Oil Co.'s No. 9 E. F. Gregory, 330 ft. N and E, SW cor. NW SW Sec. 11-17-14.
Rigging up.
J. E. Crosbie, Inc.'s No. 1 W. E. Gregory, 330 ft. S and E, NW cor. NE Sec. 15-17-14.
T.A. 3,503 ft.
J. E. Crosbie, Inc.'s No. 2-A E. F. Gregory, 330 ft. N and E, SW cor. NE SW Sec. 10-17-14.
Derrick.
Durand Dev. Co.'s No. 1 Ezzell, 330 ft. S and W, NE cor. Sec. 13-17-15.
Set 10-in. 163 ft.; drlg. 2,314 ft.
H. L. Hunt's No. 11 J. D. Gregory, C NE SW SE Sec. 10-17-14.
Set 10-in. 140 ft.; drlg. 2,375 ft.
H. L. Hunt, Inc.'s No. 9-A J. D. Gregory, C NW SE NE Sec. 10-17-14.
Comp.; flowing 100 bbls., 3,330 ft.
E. R. Henderson's No. 2 Vines, NW cor. SW SE Sec. 29-18-14.
S.D. 2,184 ft.
H. L. Hunt's No. 15 E. F. Gregory, 330 ft. N and W, SE cor. Sec. 10-17-14.
Coring 3,540 ft.
H. L. Hunt's No. 18 E. F. Gregory, 330 ft. N and E, SW cor. Sec. 11-17-14.
Location.
M. D. Ingall's No. 1 A. J. Perdue, C SE NW SW Sec. 4-17-14.
Derrick.
T. L. James & Co.'s No. 1 Gregory, 330 ft. S and W, NE cor. N½ NW SW Sec. 10-17-14.
Drlg. 3,224 ft.
Mrs. R. K. Jones et al's No. 1 Davis, 330 ft. N and W, SE cor. NW NW Sec. 28-16-14.
Set 7-in. 2,746 ft.; T.D. 2,765 ft.
Lion Oil Ref. Co.'s No. 6 H. L. Rowland, 330 ft. S and W, NE cor. Sec. 15-17-14.
Coring 3,415 ft.
Marine Oil Co.'s No. 7-A W. B. Thompson, 330 ft. N and W, SE cor. SW SE Sec. 3-18-13.
Derrick.
Monroe Prod. Co.'s No. 1 Z. Bolinclair, 330 ft. S and W, NE cor. Sec. 16-17-14.
Set 10-in. 183 ft.; drlg. 2,730 ft.
C. H. Murphy's No. 1 Union Saw Mill Co., 330 ft. N, SE cor. NW SE Sec. 29-18-11.
Drlg. 2,510 ft.
C. E. Murdock's No. 8 J. M. Gregory, C NW NE SE Sec. 10-17-14.
Rigged up and S.D.
C. E. Murdock, Inc.'s No. 7 J. M. Gregory, 330 ft. N, 330 ft. W, SE cor. NE SE Sec. 10-17-14.
Set 10-in. 183 ft.; drlg. 2,530 ft.
C. E. Murdock's No. 1 R. Pumphrey, C SW NW NE Sec. 11-17-14.
Derrick.
Reuter Oil Co., Inc.'s No. 1 J. L. Kinard, 330 ft. S and E, NW cor. SE NW Sec. 32-18-14.
Pumping 2,189 ft.; no gauge.
Geo. L. Pace's No. 1 Union Saw Mill Co., 330 ft. S and W, NE cor. NE SW Sec. 24-18-12.
Drlg. 1,550 ft.
S. H. A. Oil Co.'s No. 4 Taylor, 330 ft. N and E, SW cor. NW SE Sec. 10-17-14.
Comp.; flowing 480 bbls., 3,327 ft.
S. H. A. Oil Co.'s No. 3 Taylor, 330 ft. S and W, C Sec. 10-17-14.
Comp.; flowing 1,213 bbls., 3,333 ft.
S. H. A. Oil Co.'s No. 5 J. W. Taylor, 990 ft. S, 330 ft. W, C Sec. 10-17-14.
Derrick.
Skelly Oil Co.'s No. 7 Perdue, 330 ft. N and E SW cor. SE NW Sec. 10-17-14.
Coring 3,339 ft.
Grady Vaughn's No. 1 T. B. Rowland, 330 ft. S and E, NW cor. Sec. 14-17-14.
Derrick.

WOODRUFF COUNTY

L. P. Lively's No. 1 Perkins, 330 ft. N, 360 ft. E, SW cor. SE SE Sec. 5-5n-2w.
Rigging up.
J. N. Watkins et al's No. 1 Upshaw, 330 ft. N and E, SW cor. S WSec. 17-5n-2w.
Rigging up.

MISSISSIPPI
AMITE COUNTY

Mineral Resources, Inc.'s No. 1 Anderson, C NE NW Sec. 14-3n-3e.
S.D. 550 ft.

BOLIVAR COUNTY

White & Jones' No. 1 Ballou, SE SE NW Sec. 17-24n-7w.
S.D. 20 ft.

CLARKE COUNTY

Clarke County Oil Co.'s No. 1 Dora Butler, C SW SW Sec. 15-2n-16e.
Set 10-in. 63 ft.

HARRISON COUNTY

Big Ridge Oil Co.'s No. 1 Hinzin, NE Sec. 13-7s-10w.
S.D.; W.O. 1,100 ft.

HINDS COUNTY

Atkins & Hightower's No. 2 Sander, 660 ft. E, 160 ft. N, SW cor. NW SW Sec. 30-6n-2e.
Comp.; gauged 13,500,000 ft. of gas 1,439 ft.

ISSEQUENA COUNTY

Pelican Oil & Gasoline Co.'s No. 1 Martin & Bender, 300 ft. S and E, NW cor. Sec. 11-12n-3w.
S.D.; curing titles, 3,227 ft.

JONES COUNTY

Snow-Black Pet. Co.'s No. 2 Watson, 520 ft. W, 200 ft. S, C Sec. 24-7n-13w.
T.A. 3,900 ft.

LAUDERDALE COUNTY

Bob Dalton's No. 1 Bounds, Sec. 34-7n-14e.
Set 10-in. 560 ft.; S.D.; W.O.

MONROE COUNTY

P. J. McAlpine's No. 1 Frank Rye, Sec. 15-15s-17w.
S.D. 2,910 ft.
P. J. McAlpine's No. 1 Crook, 1,090 ft. S 90 ft. W, NE cor. Sec. 15-13s-13w.
Arranging to set 8-in. 1,514 ft.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, SW cor. SW SE Sec. 34-2n-9e.
Partly rigged up and S.D.

WASHINGTON COUNTY

Perkins & Dees' No. 1 Lee, 1,500 ft. E, 660 ft. N, SW cor. Sec. 33-16n-3w.
Set 10-in. 300 ft. and S.D.

WINSTON COUNTY

Jack Vale et al's No. 1 Moody, 713 ft. N, 667 ft. E, SW cor. NW SW Sec. 3-13n-14e.
S.D. 755 ft.

La.-Ark. Proven Fields

NORTH LOUISIANA
CADDO—BLANCHARD

W. T. Boyd's No. 3 Mitchell, Sec. 6-18-14.
Comp.; 500,000 ft. of gas, 980 ft.
Louana O. & G. Co.'s No. 1-B W. M. Hammond, 660 ft. S and W, NE cor. SE Sec. 5-18-16.
Rigging up.

CADDO—HOSSTON

Shoreline Oil Corp.'s No. 44 Crystal, 220 ft. S and E of C Sec. 12-21-16.
Derrick.

SABINE PARISH—ZWOLLE

Alexander & Crane's No. 1 Fogman, SE cor. N½ SW NE Sec. 18-7-11.
S.D.; W.O. 2,373 ft.
Ivan A. Allen's No. 1 La. Long Leaf, 330 ft. N and W, SE cor. NW SE Sec. 12-7-11.
S.D. 2,120 ft.
Crichton & Co.'s No. 1 Williams, 660 ft. N and E, SW cor. SW SE Sec. 6-7-11.
Tested dry; S.D.; W.O. 2,762 ft.
Dyer et al's No. 1 McCollister, 330 ft. S and E, NW cor. SW NE Sec. 24-7-12.
Abd.; will not finish. 1,100 ft.
Foster & Hartman's No. 1 Bowman Hicks, 330 ft. S and E, NW cor. NE Sec. 10-7-11.
Dry and abd. 2,696 ft.
E. D. Holcomb's No. 1 Porter, 330 ft. S, 330 ft. W, NE cor. SE Sec. 7-7-11.
Pulling liner 2,580 ft.
H. C. Maulding's No. 1 Davis, 350 ft. N and W, SE cor. NE NE Sec. 2-7-11.
Rigging up.
H. C. Maulding's No. 2 DeLatin, 330 ft. S and E, NW cor. NE SE Sec. 3-7-11.
S.D. 2,250 ft.
K. C. Peterson et al's No. 1 Bowman-Hicks, 330 ft. S and E, NW cor. SW NW Sec. 3-7-9.
Derrick down.
W. L. Posey's No. 1 Burkett, 330 ft. N and E, SW cor. NW SW Sec. 10-9-13.
Comp.; pumping 30 bbls., 2,011 ft.
Tex.-La.-Ark. Oil Co.'s No. 1 Pickering Lbr. Co., Sec. 3-3-12.
S.D. 2,742 ft.

EAST TEXAS (BORDER COUNTIES)
HARRISON COUNTY

R. C. Payne et al's No. 1 Lowery, E. D. Spain Sur.
P.B. to 3,524 ft.

MARION COUNTY

Ed S. Holman's No. 1 Henderson, R. Bennington Sur.
Junked hole; skidded over and R.U. on new hole.

PANOLA COUNTY

R. H. Davis' No. 1 Wooten Est., Winnie Mann Sur.
Cmtd. back and testing.
Givens & Holloway's No. 1 Wooten est., Winnie Mann Sur.
T.A. 2,152 ft.
R. W. Price's No. 1 Crawford, J. A. Williams Sur.
Set 10-in. 64 ft.
Fred Stovall Drlg. Co.'s No. 1 H. D. Ivey, P. Martin H.R.S.
S.D. for csg. 1,980 ft.
Thomason Drlg. Co.'s No. 1 Cadenhead, Jas. Smith Sur.
Rigging up.

SHELBY COUNTY

Cliff Stovall's No. 1 Pickering Lbr. Co., C H. Patterson Sur.
S.D.; rig repair, 1,485 ft.
O. P. Bush, trustee's No. 1 Pickering Lbr. Co., P. W. Harvey Sur.
S.D. 730 ft.

ALABAMA
CONECUH COUNTY

Ray L. Eastabrook's No. 1 Miller Mill Co., W½ NE Sec. 1-4n-12e.
Arranging to set 9-in. 1,006 ft.

COVINGTON COUNTY

Geometer Prod. Corp.'s No. 1 Culbreath, SW cor. SW NE Sec. 8-3n-14e.
S.D.; W.O. 1,000 ft.

HOUSTON COUNTY

Rice O. & G. Co.'s No. 1 Oakley est., SE cor. NW SW Sec. 9-3n-29e.
S.D.; W.O. 2,506 ft.

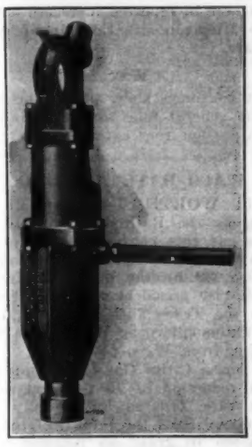
LAMAR COUNTY

DeSoto O. & G. Corp.'s No. 1 Gardner, Sec. 23-14s-16w.
S.D. 4,182 ft.

NEW AND IMPROVED EQUIPMENT

Handling Nuts Simplified With Pott Impact Wrench

A new pneumatic tool which is arousing interest is the Ingersoll-Rand Pott impact wrench announced by the Ingersoll-Rand Co., 11 Broadway, New York. This small machine, weighing about 20



pounds, will spin down a 1-inch or larger nut at 700 r.p.m. and then give it a series of smart torsional blows at the rate of 1,400 a minute to tighten it as securely as desired.

A principle entirely new to the pneumatic tool field is brought into play, that of the rubber "accumulator." This is a cylindrical block of special rubber interposed between the "multivane" air motor and the chuck. In operation, the torque from the motor is applied to the accumulator which, in twisting, becomes shortened, lifting the "hammer" from engagement with the "anvil." The hammer then is released and is spun forward to the next engagement, thus delivering a powerful blow, with considerable mass behind it, to the anvil, on the end of which the chuck is attached.

These torsional impacts occurring at the rate of 1,200 to 1,400 blows a minute exert a powerful turning effect, making it possible to remove nuts which could not be taken off except by splitting with a chisel or burning with a torch.

One man operates this wrench. The accumulator absorbs the torque and eliminates the danger of shock or injury to the operator. The cushioned action makes it possible to operate the impact wrench on high places or in positions that ordinarily would be unsafe.

PERMITE BRONZE BAR STOCK

Permite leaded bronze-bearing stock in bar lengths up to 6 feet are now available through Joseph T. Ryerson & Son., Inc., Sixteenth and Rockwell Streets, Chicago. These greater lengths make possible the speed production of bearings and bushings on a lathe or screw machine. The Permite bronze bar stock has the additional advantages of exceptionally free machinability and an exclusive turned finish that permits positive chucking. These last two features alone are said to increase the rate of production as much as 50 per cent. Permite bars are available through Ryerson in all the standard bronze alloys, in lengths up to 6 feet. Diameters available are five-eighths inch to 2 inches, by sixteenths, and the stock is turned to an accuracy of plus or minus .002 inch.

Notes About Trade Literature

The Sperry-Sun Well Surveying Co., 1608 Walnut Street, Philadelphia, Pa., sends on request a booklet describing the latest addition to its line of well surveying instruments, the H-K (Hewett-Kuster) directional magnetic clinograph.

—

The "Holdheet" lance type pyrometer, a portable hand instrument of value in the gas plant and the oil refinery, for checking temperatures wherever wall type pyrometers are used, is described in a bulletin obtainable from the Russell Electric Co., 380 West Huron Street, Chicago.

—

A 20-page booklet containing details concerning the new two-stage air-cooled gasoline or Diesel driven portable compressors, with six-cylinder engines, announced by the Chicago Pneumatic Tool Co., 6 East Forty-fourth Street, New York, may be obtained on request to that company.

—

Three bulletins, each describing a type of turbines of mechanical drive, are announced by the General Electric Co., Schenectady, N. Y.

—

An addition to the Lincoln line of "Shield-arc" welders, the AC motor-driven types SAC300 and SAC500, is described and illustrated in a bulletin obtainable from the Lincoln Electric Co., Cleveland, Ohio.

—

Merco centrifugal separators for desanding rotary drilling mud are the subject of an interesting bulletin which the Merco Centrifugal Separator Co., Ltd., 343 Sansome Street, San Francisco, is sending to those who write for it.

—

Northern Equipment Co., Erie, Pa., has published an illustrated paper by E. G. Grady, plant engineer, on "Operating Experience at Masonite with High-Pressure Boiler Feed Control." It may be obtained by writing for folder No. 137.

—

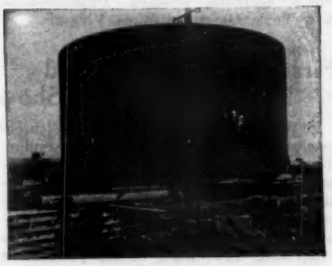
A booklet that is likely to be kept handy in garages, refineries, repair shops, in fact wherever there are leaks, breaks, chips, splits, cracks, and so on to be mended is the Smooth-On Repair Book mailed on request by the Smooth-On Manufacturing Co., 570 Communipaw Avenue, Jersey City, N. J.

—

Merco Nordstrom Valve Co., 400 North Lexington Avenue, Pittsburgh, Pa., subsidiary of the Pittsburgh Equitable Meter Co., has issued a 32-page bulletin describing "Merco" lubricants for Nordstrom lubricated plug valves and giving detailed information on over 300 different services.

1,000-Bbl. Tank Is Moved Without Cutting It Apart

The unusual feat of raising a 100-ton, 10,000-bbl. tank vertically 14 feet from the ground level to an elevated railroad



right of way and moving the unit intact 500 yards has just been accomplished in Chicago. The three-year-old cone-roof, bolted and welded tank (52'6"x27'3") was sold by the Hughes Oil Co. to the Seneca Petroleum Co. It contains eight compartments, one circular and seven radials, each equipped with steam coils which were left intact. Unusual procedure is to cut a large tank apart to move it, but in this instance, because of the solid construction, this was not deemed necessary. The tank was built by the Graver Tank & Manufacturing Corp.

Spang, Chalfant & Co., Inc., have opened a Gulf Coast and southwestern sales office at 1508 Second National Bank Building, Houston, Tex. A. S. Weaver and C. C. Brush, sales representatives, will work out of the new office. The company distributes its pipe products in Texas through the National Supply Co., Republic Supply Co., Houston Oil Field Material Co., Sabine Supply Co., and the Hercules Supply Co.

Jenkins Introducing Line of Regrind-Renew Valves

Jenkins Brothers, 80 White Street, New York, announce a line of extra heavy bronze regrind-renew valves made in globe and angle patterns. Figures 970-973 are fitted with nickel-alloy seat ring and disc and Figures 976-979 with nickel-alloy seat ring and plug. The latter (plug-seated) design is especially recommended for throttling or where extremely severe services are encountered.

These valves are of the union bonnet type in sizes to 2 inches. In the 2½-inch and 3-inch sizes, the valves are made with bolted bonnet. Screwed end valves are recommended for 300 pounds steam and 500 pounds oil, water or gas. Flanged end valves are for 250 pounds steam and 400 pounds oil, water or gas.

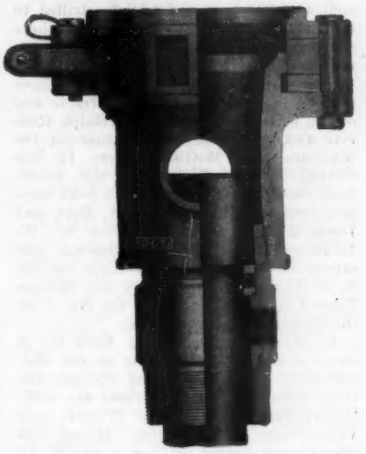
In all of these new valves the diameter of the disc or plug is scientifically correct in relation to the seat which permits the valves to be reground repeatedly without danger of scoring or grooving the disc.

Stuffing-boxes are exceptionally deep and contain a liberal bulk of lubricated and graphited asbestos packing. Use of a bronze gland or follower compresses the packing, permitting tightness with slight effort applied to the packing nut. This reduces friction around the spindle and provides for ease of operation.

The bodies of the valves are made of Jenkins electric furnace bronze and are liberally proportioned, uniform in thickness and have free passages. The spindles, of manganese bronze, are accurately machined and provided with Acme threads. The valves are so designed that when fully open, the fluid passing through the valve cannot contact the operating threads of the spindle. This feature protects the threads against foreign deposits or accumulations of an abrasive nature which so commonly cause excessive wear.

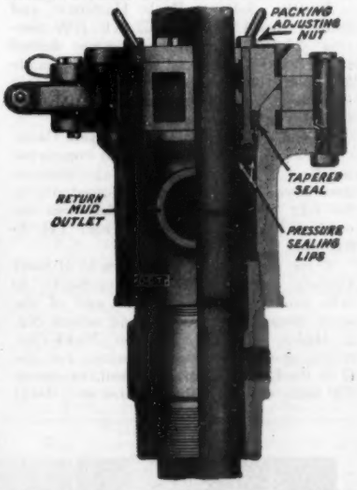
OCT Develops New Way of Swinging Casing in Hole

Oil Center Tool Co., Houston, Tex., has introduced a new method of swinging casing in the hole before cementing,



through use of a combination of the company's Type L bradenhead and Type D blowout-preventer. Casing is run through the blowout preventer and swung in the bradenhead.

This method offers the operator blowout protection during the entire time the casing is being run. Illustration No. 1



shows a view of the blowout preventer closed around the casing and sealed off, and No. 2 shows a view of the preventer and the bradenhead after casing has been run and suspended on the packing unit in the bradenhead, ready for cementing. Auxiliary packing is provided for use between inside of bradenhead and outside of collar. In connection with this packing a packing gland and gland lock nut is furnished.

Swinging of the casing before cementing eliminates the time and trouble of backing the last joint of casing out and cutting a casing nipple the correct length. By this method there is no necessity of hanging the pipe string on elevators or rotary slips while cement is hardening.

The packing element of Type L bradenhead is rubber or asbestos.

The safety of this method of swinging casing before cementing has been proved in the field, with the safety element being particularly evident where there may be upper gas sands that carry any appreciable amount of pressure.

Eastern Fields

(Continued from Page 67)

down 450 feet on the William Johnson farm in Union district. In Jefferson district, Ritchieville Oil & Gas Co. is down 500 feet on the Pierce F. Mathaney farm.

In Raleigh County Godfrey L. Cabot, Inc., is drilling two wells in Slab Fork district. No. 6 on the Beaver Coal Co. lease is drilling at 1,350 feet and No. 7, same lease, is shut down at 868 feet for engine repairs.

In Ritchie County there are additional new locations. About 2 miles west of Petroleum in Grant district, Clarvin Oil Co. has started drilling deeper Woodlawn Oil Co.'s No. 1 on the William Marbury 900-acre tract. It was an Injun sand well at 1,913 feet and will be drilled to the Berea sand. B. F. Gilmore and others are down 1,700 feet in this district on the William Britton farm, a test. In Union district, Jobes and Prunty have made a location on the R. G. Davis and others lease. In Clay district, Ralph Roberts and others have a location on the Mayhurst and McGinnis farm. In this district, W. A. Bickerstaff and others have reached 1,095 feet on the John Grogan farm. In Murphy district, Burk and Deem have a location on the W. W. Lawrence farm. Shannon Dawson and others have moved in the tools on the E. C. Dawson farm. Patton and Wilson Farm Oil Co. is rigged up for No. 7 on the Patton and Wilson lease.

In Wirt County, Brushy Fork Oil & Gas Co. has completed a rig on the Wilson heirs farm in Burning Springs district. Glen Roberts and others are drilling at 2,650 feet on the Withers and Vandevender farm, a test. Mason and others have started drilling on the D. C. Woods farm.

Kansas Fields

(Continued from Page 64)

going, Russell County is taking the leading role for exploratory work in the State.

In the Sellens Pool, Hartman and Blair's No. 1 Sellens, SE NE NW Section 26-15-13w, Siliceous lime drilled from 3,285-3,300 feet, total depth, made 277 bbls. on the pump and after acid treatment jumped production to 490 bbls. for its completed gauge.

In the Gorham Pool of Russell County, Central Petroleum Co. had completed its No. 2 Dortland-"B" in the Oswald lime found at 3,027-74 feet, total depth, for 642 bbls. daily. Production was increased by acid treatment from 144 to 642 bbls.

Three semiwildcat producers in Russell County were making arrangements to take production tests at the end of the week. Stearns & Streeters and others' No. 2 Miller, SE cor. Section 30-14-13w, which opened up a new horizon for the Hall Pool, southeast of Russell, swabbing 150 bbls. of oil in three hours at a total depth of 3,154 feet, in either the Gorham sand, the granite wash or the Siliceous lime, was shut down to replace flues in the boilers.

Wolf Creek Oil Co.'s No. 1 Mills, SW cor. Section 10-14-15w, a semiwildcat producer in the Oswald lime topped at 3,018 feet and stopping at 3,084 feet, pumped 50 bbls. in 14 hours. It has been acidized and a battery of tanks has been erected on the lease.

The Russell townsite producer of the Carey Brothers, No. 1 Whitman, on Lot 1, Block 1, Brooks Addition, was shut in waiting on pipe line connection before taking a potential production test. This test had Siliceous lime from 3,268-74 feet, total depth, and the hole was full of oil.

Russell County drew five new operations during the week which were: Western Exploration Co.'s No. 1 Durr, SW NW SW Section 31-15-12w, rig; Max Kirk and W. R. Jones' No. 1 Milberger, NE NW NW Section 7-14-14w, location; Skelly Oil Co.'s No. 1 Opdycke, SW cor. Section 29-14-13w, location; Allison and others' No. 1 Dumler, Lot 6, Block 8 of Hallers Addition, Russell townsite, cellar, and Buffalo Oil Co.'s No. 3 Schaffer-Anchutz, SE NE NW SW Section 27-13-14w, cellar.

Sedgwick County

E. B. Shawver's No. 3 Brookings, SW NW SW Section 16-28-1e, Robbins Pool of Sedgwick County, had Chat formation from 3,068-3,110 feet, total depth, and it was acidized to yield 103 bbls. of oil on its potential completed gauge.

Another completion for the Robbins Pool in Sedgwick County during the week was Dickey Oil Co.'s No. 1 Lohkamp, SE NW Section 20-28-1e, which produced 1,443 bbls. of oil from acidized Chat logged at 3,100-31 feet, total depth.

Sedgwick County had three new operations starting up during the week, two were in the Robbins Pool and the other was in the Wright Pool. Dickey Oil Co.'s No. 2 Brown, NW SW NE Section 20-28-1e, was drilling at 2,175 feet; Magnolia Petroleum Co.'s No. 5 Robbins, SW NW SE Section 20-28-1, was a location, and Sovereign Oil Co.'s No. 3 Scherger, NW SW NW Section 6-26-1, was drilling at 930 feet.

Scott County

Although field reports had it that the far western Kansas Mississippi lime discovery well of the Atlantic Oil Producing Co., No. 1 Vaniman, C SE NE Section 15-20-33w, Scott County, had been completed at a total depth of 4,686 feet, 16 feet in the lime at which depth it produced 572 bbls. of 23.5 gravity crude. It was learned that it will be deepened several feet in an effort to increase production.

Trego County

Rig was up for Alma Petroleum Co. and others' No. 1 Lempke in the C SE SE Section 10-11-23w, Wakeeney area in Trego County.

Woodson County

Kitt and Meyers were moving in machine for their No. 1 Nordmyer, SW NW NW Section 19-25-14, Woodson County.

Ed Stough, sales representative of U. S. Rubber Co., in Texas, and J. K. Gibson, superintendent of gasoline terminals in the Texas Gulf Coast area for Phillips Petroleum Co.

Fisher Assumes Duties as Sales Representative

Gordon Fisher, Jr., who was transferred from the Pittsburgh headquarters of Spang, Chalfant & Co. to the Tulsa district office January 1, has assumed the duties of sales representative in the Oklahoma-Kansas district. H. G. Texter continues at the Tulsa office as engineer. Mr. Fisher is a native of Pittsburgh, and attended Shady Side Academy there. Later he graduated from Lawrenceville in New Jersey and entered Princton University, where he took a two-year course.

GORDON FISHER, JR.

Upon leaving school Mr. Fisher was employed by the Carnegie Steel Co. in Pittsburgh in its sales department, and for the past five years has been in the sales department of Spang, Chalfant & Co., traveling the Pittsburgh territory, which includes western Pennsylvania, New York, Ohio and West Virginia.

First Aid Teams to Hold Meet at Equipment Show

HOUSTON, Tex., Jan. 21.—With 40 entries expected, the world's championship contest of first aid teams of the petroleum industry will be held in Houston during the week April 8-13 in connection with the sixth annual Oil Equipment and Engineering Exposition. The Sugarland, Tex., team of the production department of the Humble Oil & Refining Co. now holds the championship trophy won in Tulsa last May.

First aid teams of many oil companies already have started special training. Although companies may have more than one team present they are limited to one entry for each department. The various departments are expected to hold their own eliminating trials to select the team to compete in the championship contest.

J. J. Delahide, district manager of the E. D. Bullard Co., Houston, will be director of the contest, assisted by judges and field committees. The U. S. Bureau of Mines manual will be the guide with details to be explained further by the American Petroleum Institute committees on first aid training. This committee is composed of H. N. Blakeslee, secretary, American Petroleum Institute, Dallas, Tex.; R. E. Donavan, Standard Oil Co. of California, San Francisco; P. E. Keegan, Shell Petroleum Corp., Houston, and G. O. Lockwood, Empire Oil & Refining Co., Bartlesville, Okla.

Gasoline Prices in Chicago Area Are Holding Well

(Continued from Page 81)

gas oils is considered to be better. Firmness of crude is supplying a good background, also the currently stepped-up rate of operations in steel and allied industries. Prices are mostly steady.

Lubricants

Lubricants have been having a slow time of it, but the tone is better. The trade seems to be recovering a little of its backbone on purchases, but generally trade is slow.

Naphthas

Solvents and naphthas have been marking time and continue so. Prices are about unchanged all around. Some interest is shown here in reported increased activity in the Michigan situation. Inquiries are moderate.

Wax

Wax continues slow, prices unchanged and the general tone slow and dull. Inquiries are not very extensive.

WACO RATE HEARING

FORT WORTH, Tex., Jan. 21.—A hearing by the Railroad Commission in Waco's gas rate charge will be resumed January 28. The hearing was interrupted December 20 by the death of Karl F. Griffith, vice president and general counsel for the Texas Cities Gas Co., killed by an automobile near Waxahachie while returning from Waco to Dallas.

The Texas Cities Gas Co. is appealing from a reduction of 15 per cent in the present rate, ordered by the city commission, and from the refusal of the city commission to grant an increase of 15 per cent over the present rate.

EDMONTON GAS PROPOSAL

EDMONTON, Alberta, Jan. 21.—Mayor J. A. Clarke has asked the Edmonton city council to notify Northwestern Utilities, Ltd., of the city's intention to take up its option to purchase the system. Under the franchise agreement, which expires in October, 1935, the city has the right to purchase. Mayor Clarke has estimated the price of the plant at $3,000,000 while a figure of $7,000,000 was quoted by H. R. Milner, K.C., president of the company. The price to the city will be fixed either by agreement or by arbitration.

CLASSIFIED ADVERTISING

Financing

JOHN MORRIS, Seventh Floor, 1237 Market Street, Philadelphia, will help float small deal. No stock selling. Send full facts in first letter.

JAMES E. MILLER CO., 207½ E. Third St., Tulsa, Okla., will co-operate with responsible parties seeking aid in financing projects of higher order.

Experienced oil and chemical engineer has a patentable process and apparatus for manufacturing gasoline, benzine and allied products, deblooming oil, etc. Cost production safe and much less than at present. Practically tested. Will consider arrangements. What may you offer? Interview solicited. Address Box G-531, The Oil and Gas Journal, 415 Lexington Ave., New York City.

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"Evidence of Conception,"
Instructions "How to Establish Your Rights" and complete information FREE!
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418 Bowen Building,
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Just purchased, will sell where are or cut down and re-erected any place in United States at great saving. Will also accept orders for quantity of sheets any thickness. Several hundred tanks. All sizes.

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25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air Compressor. Six-inch Oster Pipe Threading Machine. Also, large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.
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1—75 HP GENERAL ELECTRIC Induction Motor.
1—24'x60'x12' High Wood frame sheet iron Engine Room. Address Box G-510, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE
AND WANTED TO BUY
Good Used Compressors, Diesel Engines, Boilers, Derricks, Hoists, Tanks, Pipe, Rail, Cars, Locomotives, Cranes. MISSISSIPPI VALLEY EQUIPMENT Co., 501 Locust St., St. Louis, Mo.

FOR SALE — 2—40 H.P. 2 cycle Weber Gas engines with enclosed reversing clutches. 2—30 H.P. 2 cycle Superior gas engines with enclosed reversing clutches. General Machine & Supply Co., Wichita Falls, Texas.

FOR SALE — Several safety pulling machines in fair condition. $50.00 each. I.T.I.O. Company, Bartlesville, Okla.

60 MILES of 3" line pipe, like new. Part of pipe 9 lb. tubing, stencil marks still legible. Price 18c per ft. f.o.b. cars Clarksburg. Wright Brothers, Clarksburg, W. Va.

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NATURAL Gasoline Plant Supt. with 21 years' experience with all types of Natural Gasoline Plants, desires Supt. position. Best of references furnished. Address Box G-503, The Oil and Gas Journal, Tulsa, Okla.

Practical prod. and drlg. Supt. Yrs. of exp. handling prod. and cable tool work, desires position. Box 194, Texarkana, Tex.

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CHEMIST Wanted with refinery operating and chemical laboratory experience. Good personality and ability to handle other men. State salary desired. Address Box G-504, The Oil and Gas Journal, Tulsa, Okla.

WANTED — High grade refractory salesman to represent us on straight commission basis, selling direct and establishing dealers and agents in restricted territories on complete line high grade Missouri products. Excellent opportunity for proper party. Address Box G-532, The Oil and Gas Journal, Tulsa, Okla.

Wanted

Wanted — Financial Co-operation, development of 3,000 ac. blk.; Mich. shallow territory. Good prop. to responsible party. Write if interested and can invest. P. O. Box 67, Mount Pleasant, Mich.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
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DELAWARE CHARTERS — Fee small; submitted forms. Chas. G. Guyer, 901 Market Street, Wilmington, Del.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

Royalties—Production

BETTER CLASS
MONTHLY PAYING ROYALTIES
Quoted Dealers Exclusively.
W. E. COOK
Suite 812, Palace Bldg., Tulsa, Okla.

PRODUCING OIL ROYALTIES
for dealers.
H. P. BOWEN
842 Kennedy Bldg., Tulsa, Okla.

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood. P. O. Box 2261, Tulsa, Okla.

Producing Oil Royalties
at wholesale.
ROBERT L. KINKAID, INC.
Petroleum Bldg., Oklahoma City, Okla.

KANS., Okla., Tex. Producing Royalties. Also spreads under drilling wells. Merit Royalties, R No. 3, Topeka, Kans.

ROYALTIES producing and nonproducing in Kansas, Oklahoma and Texas. James R. Haynes, Grantville, Kansas.

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Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. Complete set of Forms and Reports for filing with Securities and Exchange Commission accompanies every order. Inquiries invited.
B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

WE OFFER 1¼ royalty acres Fletcher Smith 80 acre tract, Van Pool, 10 wells, price $3,750 for this interest, earnings averaging $45 month for the last year period. E. T. Marion Real Estate Co., 407 Southwestern Life Insurance Bldg., Dallas, Texas.

NEW OIL WELLS and new locations is putting the old time feeling back in this part of the Texas panhandle. I am giving my clients, new and old, the same dependable help that I have given them for the past thirty years in this place in Oil land and other investments.
E. B. REEVES
(Investments)
Alanreed, Gray County, Texas.

PRODUCING OIL ROYALTIES
Bought (Wholesale) Sold
Inquiries invited from Oil Companies, Bankers, Dealers.
M-K OIL COMPANY, INC.
20 Broad St. New York.

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PAYABLE IN ADVANCE
MONTHLY

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To avoid delay be sure to send remittance with copy. Over payments will be refunded. One time insertions will not be run until fully paid.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma.

Royalties—Production

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Income Producing Royalties
Mid-Continent Field
Harry A. George
Exchange Bank Bldg., Tulsa, Okla.

VAN POOL OIL ROYALTY
Bought — Sold
Box 38, Wall Street P. O., New York.

DEALERS IN ODD LOTS
EAST TEXAS AND VAN POOL
PRODUCING OIL ROYALTIES.
We Buy and Sell.
E. T. MARION REAL ESTATE CO.
407 Southwestern Life Ins. Bldg.
Dallas, Texas.

LAND in Fee, All royalty close in. 10 Acres up. Near new locations. Owner, Geo. W. Seckman, Edmond, Okla.

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VAN POOL — EAST TEXAS
Bought — Sold — Wholesale.
W. R. Brown & Co., Inc.
14 Prospect St., East Orange, N. J.

J. A. WOLF AND COMPANY
105 West Adams Street
Chicago, Illinois
Dealers in Oil Royalties since 1918.

Low priced leases Royalties near Permian Basin. Wildcats being drilled by Majors and Independents. 50 to 1 chances quick money. E Croft, Proctor, Texas.

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Leases—Production

NEW MEXICO Oil and Gas Leases and royalties., Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, N. Mex.

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You, probably, want to buy or sell leases around drilling wells, production or royalty and have no reliable source of supply. You might finance a likely wildcat. We, on the ground, need an outlet. Meritorious propositions often go begging. This ad is intended to break the ice, and open negotiations. If you are prepared to exchange bank and other references and able to function, we would appreciate a line from you.
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P. O. Box 33, Tyler, Texas.

For Sale—300 acres oil lease in Real County, Texas. About 10 miles west of new oil discovery in Kerr County. C. Cohn, Whiteville, Tenn.

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Wanted—Direct contact with refinery seeking outlet for Okla. B.S. and Neutrals. Lubolink Products Co., Chicago Hts., Ill.

HAVE proven patented process producing gasoline, etc., at economical cost over present methods. Will entertain contract on royalty, or manufacture. Minimum required $10,000. Address Box G-530, The Oil and Gas Journal, 415 Lexington Ave., New York City.

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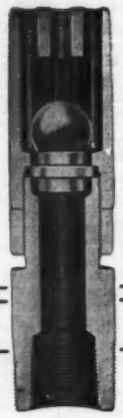
The KEY to LOWER LIFTING COSTS

CORRECTLY DESIGNED · · ECONOMICALLY PRODUCED

REASONABLY PRICED

The B-M-W OVERSIZE LOWER VALVE

The use of larger Balls and Seats adds to capacity—the trouble you have experienced with leather-packed Lower Valves will be eliminated. Threading directly into the Lower Working Barrel Coupling gives a fluid-tight joint.



AT ALL GOOD SUPPLY STORES.

BRADFORD MOTOR WORKS INC.

OIL WELL SUPPLIES

BRADFORD, PA. TULSA, OKLA.

EXPORT OFFICE—30 CHURCH ST.—NEW YORK CITY

CRACKING PLANT FRACTIONATING TOWER

10′ diameter, 68′ long, for service of 550 deg. F. in feed section, 380 deg. F. in top section, and 500 deg. F. in bottom section. Operating pressure 100 p.s.i. Riveted construction. Shell thickness of 1″. All rivets and seams sealed by electric welding. Produced in our shops.

Send us your inquiries.

J. P. DEVINE MFG. CO., INC.

Subsidiary of Mt. Vernon Car Mfg. Co.

MT. VERNON, ILL.

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